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AMERICAN VETERINARY REVIEW

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AMERICAN VETERINARY REVIEW.

JULY, 1908.

EDITORIAL.

EUROPEAN CHRONICLES.

PARIS, May 15, 1908.

THE PROCEEDINGS OF THE FORTY-FOURTH ANNUAL MEETING OF THE A. V. M. A. came to me a short while ago, and in glancing at them I am reminded that I am the only surviving organizer of that to-day so grand and so powerful body of scientists.

How far from the days where in the Astor House a few met and organized the U. S. V. M. A.—how far from the first meetings, where the life of the scarcely born association was already endangered by the doings of Jennings and McClure—how far from those semi-yearly gatherings, now in New York and then in Boston, when a few hours covered all the work done and a few pages enregistered it—and to-day the proceedings make a handsome volume of over 500 pages, the work has demanded several days to be accomplished and the number of members is nearly 750! A small army, yearly increasing and yearly making its influence and power felt more and more. When the fiftieth anniversary will come in six years, there will not be a veterinarian in the United States that will not belong to the national organization. I wonder if there will be any of the original organizers left to celebrate!—Why not?

But what of the proceedings?

* * *

Well, every one will and must read them!

The masterly, but perhaps a little too long address of Prof. Law, the most thorough report of the Committee on Intelligence

and Education, by Drs. Pearson and D. A. Hughes, the report of the Committee on Diseases, by Drs. V. A. Moore, A. D. Melvin, L. A. Merillat, and others; all of them will certainly be looked into again, as their contents demand the careful consideration of a quiet reading.

The papers were plenty! Some, I may say quite a number of them that were read were honored with more or less discussion, such as that of Dr. W. J. Taylor on the agglutinating and precipitating power of glandered and non-glandered blood serum in diagnosis; of A. Liautard, with John Smith and his misfortunes; of Dr. A. D. Melvin on the future work in eradicating tuberculosis; of Drs. Mohler and Washburn on tuberculosis of hogs with special reference to its suppression; of Dr. M. H. Reynolds on milk as affected by stable practices and subsequent handling; of Drs. C. Cary and W. Giltner on the municipal milk inspection in the south; of Drs. S. Gilliland and E. L. Cornman on the effect of the tuberculin test upon lactation; of Dr. G. Johnson on stable ventilation from a clinical standpoint; of Prof. W. L. Williams on the surgical relief of roaring, and of Dr. D. A. Hughes on the place of veterinary medicine in state education.

These papers will no doubt be read over again. They are too valuable to be appreciated with a reading made in a hall. But there were also a number of others, which were not read, or if they were, did not bring discussion. They will prove a new, valuable and instructive treat. For instance, the long and important one, of Dr. A. T. Kinsley on Tumors, which is so well illustrated; the reminiscences of bovine tuberculosis in Massachusetts, by Dr. J. Winchester; the infectious lip and leg ulceration of sheep, by Dr. M. Knowles; the veterinary schools of Europe, by Dr. P. A. Fish, and several others.

The report of the Association of Faculties will certainly in its brief appearance, and at this moment where the subject of reforms in schools is occupying so much attention, be the object of consideration and approval. But it is not possible for me to review in more detail the contents of this volume, which is such

a valuable addition to the history of veterinary medicine in America. There are so many important points to consider that all I can add is to repeat: "Well, every one will and must read them."

* * *

I may, however, be allowed to say a few words more for personal motives, viz.: To answer and to address the critics of my paper, "John Smith and his Misfortunes," my thanks for their remarks and for their conclusions which I am sure agree with some of the arguments held by J. S. in his demands. Indeed, Dr. Fish says: "But uniformity is under the present condition in this country an ideal condition. The condition, however, is not hopeless. The A. V. M. Association can exert a great deal of influence. It can influence them (the schools) to some extent by refusing membership." Almost the very words of J. S.

Dr. Noack: "Certainly I am willing to admit, if the standards were all alike, then it would be injurious to demand examination of this man. I think the time is not very far off when we will have uniformity of preliminary education, uniformity of examination." But Dr. Noack asks twenty-five years for that! I am more hasty—I may also add that I have made no allusion to the examination of a foreign graduate, therefore I do not see why my able critic refers to it and brings on the examination of a French graduate going to practice in Germany. Of course he will, but as you say "he will have very little trouble to gain the permission"—it is not so in the case of J. S.

Dr. Hoskins said: "The State Examining Boards have been forced upon the profession—because of the wide variation between the curricula of the various schools—the Association of Faculties has arrived at a minimum proposition for each school to live up to." Is not that the first step towards the realization of the uniformity asked by J. S?

Dr. Melvin complies with the requirements of Civil Service Commission.

Dr. D. A. Hughes says that I contradict myself and takes as proof my writings in one of the issues of the REVIEW, where I said that although he has a diploma from one of the French schools, a candidate to enter the army or the sanitary service or be admitted as teacher in one of the schools, has to pass a special examination. Of course he has, and J. S. also asks to. Read page 263 of the proceedings, which says: "He asks that the same (the recognition of his diploma) should be for his admission for Veterinary Inspectorship in the Bureau of Animal Industry and also in the army, *excepting of course the obligations of a special examination on some special subjects which relate to these special positions!*" Where is the contradiction?

I will have patience, and without waiting twenty-five years the uniformity asked by J. S. is bound to come. It is rapidly progressing. Dr. Hoskins has started it.

* * *

PART PLAYED BY HELMINTHES, THEIR LARVÆ AND THOSE OF INSECTS IN THE TRANSMISSION OF PATHOGENOUS MICROBES. —In my chronicle of April last, making allusion to the investigations by Prof. Weinberg on the part played by abdominal parasites in the etiology of infectious diseases, I had an opportunity of relating facts of interest upon the *Echinorhynchus gigas,* which is not uncommonly found in swine. Two other articles from the same observer have been published in the *Annales de l'Institut Pasteur* from which I may be allowel to make a few extracts.

Part played by Helminthes, their larvæ and those of insects in the transmission of pathogenous microbes, is the title of these articles, which are found in the June and July, 1907, issues of this superior publication. They contain a great number of observations relating to this interesting subject, and speak of the researches made by the author in a large number of intestines of animals. Those are the ones that interest us the most.

There is no positive proof that ascarides can fix themselves upon the healthy mucous membrane. In one intestine that con-

tained 725 ascarides, this membrane was entirely free from any lesion. And yet this nematod must have in certain cases an effective action in some intestinal lesions. For Weinberg, intestinal perforations which are attributed to ascarides, occur as follows: Their bites give rise to some severe local congestion, starting point of an inflammation which may end in ulceration, which the ascaris enlarges to make its way through the intestinal walls.

Spiropteras are supposed to cause irritation of the submucous connective tissue of the right sac of the stomach and to give rise to the formation of the tumors that are found in that sac. Out of 2,000 stomachs, about, Weinberg has found these tumors only in four instances. They were covered by a perfectly healthy mucous membrane. The centre of the tumor contained spiropteras, leucocytes and microbes. According to Raillet microstome spiroptera do not give rise to sub-mucous inflammatory tumors and yet they may occasion ulcerations.

Sclerostomas firmly fixed on the mucous membrane of the cæcum and colon, perforate the capillaries and suck the blood. Their bites may cicatrize or again be complicated with a small ulceration. Besides this, small œdematous tumors are sometimes developed. This lesion may contain microbes. As the parasites gather in masses, their agglomeration assists the intestinal infection. Able to inoculate pathogenous microbes, sclerostomas can give rise to fatal septicæmia.

In examining lesions due to tænias in the cæcum, Weinberg has been able to find the explanation of the mechanism of the transmission of microbes by these worms. At the point where they are fixed, small depressions and ulcerations of the mucous membrane are observed. In fixing itself upon the mucus, the worm deposits on the same spot the microbes that cover its suckers, and they with those which are already on the mucous membrane give rise to a severe congestion followed by inflammation and ulceration. These observations made with the tapeworm of horses show that cestods do act an important part in the transmission of pathogenous microbes.

Larvæ of helminthes pass easily through the intestinal mucous membrane, to reach by the lympathic or blood circulation the various organs of the economy. Can they transport microbes wherever they go? Sub-mucous larval cysts of sclerotomas contain microbes belonging to various species of bacterias. The sub-peritoneal also do, although in smaller number, it is certain that larvæ of nematods in passing through the mucus leave on its surface the microbes that they carry. Some larvæ, however, can introduce microbes directly into the circulation, and even in the sub-mucous and sub-peritoneal layer.

For the larvæ of Oestri, that are found in the stomach, it is well probable that on account of the microbes that they can introduce in the thickness of the walls of the stomach, they do inoculate virulent microbes to which some form of septicæmia in the horse can be attributed.

The general conclusions of the author are that most helminthes do assist in the penetration of microbes through the intestines.

* * *

OPHTHALMO-REACTION AND NON-ACOUTUMANCY TO TUBERCULIN.—Since the day when Prof. Vallee had shown that the reaction of Wolff-Eisner was applicable to the diagnosis bovine tuberculosis, the real public interest of the method has been manifested by the many publications that have been made on the question and by the many important points relating to it, which have already been obtained. And if it has been established that the method of the oculo-reaction does not possess the so positive value of sub-cutaneous tuberculination, and that there is not impossibility to associate the research of the ocular reaction with the utilization of tuberculin by hypodermic injections, and again that sub-cutaneous tuberculination promotes the activity of oculo-reaction, when it is done after a test of this last, there are other points which are yet to be investigated. Of course Prof. Vallee was among the first to look into them, and he has studied them in his article *"Ophthalmo-reaction and non-acoutumancy to tuberculin,"* which he has published in the *Revue Generale.*

Upon eight tuberculous bovines which had not yet been submitted to the test of either ophthalmo-reaction or of tuberculination by the skin, he applied in one eye, in three different operations nineteen days apart, one drop of tuberculin. In all, the reaction was positive and progressive in severity. A last instillation made with one-tenth of a drop, gave a reaction at least equal in severity to the one obtained in the preceding experiments, and much more than that obtained by a first instillation of a similar dose on a fresh subject. Therefore, during these successive instillations, a true sensitivity of the eye operated upon had taken place. At the end the experiment, the eye that did not react, keeps the first sensitiveness of the oculo-reaction.

* * *

OTHER POINTS OF INTEREST.—This sensitiveness of the eye by successive instillations does not take place in subjects which are free from tuberculosis. Very young calves and rabbits have received instillations of a big drop of tuberculin without ever giving the slightest ocular reaction.

And besides, the sensitiveness carried as above, seems powerless to promote the reaction in tuberculous subjects, which do not give from the start the oculo-reaction, when on the contrary, they do react to tuberculin injected under the skin. Vallee has bovines which react actively to tuberculin and have never given positive ophthalmo diagnosis.

A long experience has shown that in tuberculous bovines, subcutaneous injections of tuberculin, made with a diagnostic object, give positive results when carried out in the same way in one animal only when a long month has elapsed between the two successive injections.

Ocular reaction is always obtained in animals which are likely to furnish the oculo-reaction, notwithstanding previous hypodermic injections of tuberculin.

Therefore better than the double dose of tuberculin followed by the early recording of the temperature, preconized by Vallee himself, oculo-reaction may serve to expose the fraudulent inter-

ference of dealers or again serve at the frontiers in the cases of importation of tuberculous animals.

To this point of view especially, it then becomes important to study the value of this new method, viz., oculo-diagnosis to be utilized alone or in connection with the hypodermic injection of tuberculin!

* * *

OZONED TERPENE OR TALLIANINE.—I have come across lately a pamphlet due to a physician on Ozoned Terpene, or as it is better known to veterinarians, on *Tallianine*.

It is quite surprising that, notwithstanding the advantages that therapeuty can derive from its use, it is almost entirely ignored on the continent, at least in France, where it was discovered and is made. And another fact of no less interest is that, while the use of intravenous injections of physiological serums and of colloidal silver has been first recommended by veterinarians for Tallianine also, it is to them that belong the priority of using it in the treatment of diseases of our domestic animals. American veterinarians have indeed been the first to appreciate the good results that may be obtained with it.

A young physician, Dr. J. Gautier, is the author of the pamphlet that I allude to. He also studied Tallianine in its composition and mode of preparation, he convinced himself of its mode of action and of its innocuity, in a general point of view, of that on the cardio-vascular apparatus, on the urinary and respiratory systems, on tuberculosis and with *Staphylococcus aureus, Streptococcus pyogenes* and pyocianic with also experimental infections, trypanosomiasis, dourine, nagana. He then recorded a number of observations as they were made in various hospitals. Four cases of simple and double pneumonia with recovery, of one case of broncho-pneumonia, complication of measles, with relapse because of too early arrest in the treatment and followed with recovery when this is resumed, of infectious endocarditis with recovery, of pulmonary tuberculosis, of two cases of puerperal infection, three of puerperal septicæmia, one

of paratyphic affection all followed with recovery. He also has resorted to Tallianine for some external use with great advantage. He closes his very interesting thesis with the following conclusions, which may permit veterinarians to extend their application of this mode of treatment.

From the study made of Tallianine it is shown that in the treatment of infections, it possesses an effect nocive for the microbe and beneficial for the organism.

Nocive for the microbe, that is to say antiseptic, by the great quantity of ozone that it contains. Beneficial for the organism, because it promotes an intense hyperleucocytosis, while at the same time, it destroys toxic products first by direct oxydation and then removes by its diuretic action and facilitating their expulsion.

Secondarily, it also has a tonic effect on the heart and acts as a powerful antiseptic of the pulmonary apparatus.

The use of this agent is then peculiarly indicated:

1. In all severe acute infections. It will prove principally advantageous in anaerobic infections.

2. In cardiac collapse and asystoly, especially in dropsical individuals.

3. In pulmonary infections with anaerobic germs, pulmonary gangrene, fetid bronchitis.

4. In diseases with difficult and slow nutrition.

5. Finally as a useful adjunct and with specific antitoxic serums in diphtheria and specially tetanus, whose toxines are destroyed then by oxydation.

The external use of this preparation ought to be recommended in the treatment of anaerobic suppurations.

* * *

Acute Anterior Poliomyelitis? No Rabies.—I have just gathered in the proceedings of the *Academie of Medicine of Belgium* a very interesting case of comparative pathology (*Human Rabies*) which shows how errors of diagnosis are likely to occur. On the 3d day of last May, a man was acci-

dentally wounded on the forehead and the chin by his dog, which was suffering with paralysis of the lower jaw. Three days after the dog died with general paralysis. Rabies was not suspected. On June 8 the man complains of neuralgic pains localized on the cicatrices of his old wounds. He has a slight degree of hydrophobia. On the 13th, suddenly, without chills or fever, he has pains and thrillings in the left arm with paresia of the musculature. This in a few days invades the right arm, the trunk and the lower extremities also.

Examined on the 19th of June, he has none of the symptoms of hydrophobia, has no difficulty in swallowing solids or liquids. His intelligence is normal. Cutaneous sensibility is normal. The pre-eminent symptom is a lax and complete paralysis of the muscles of the thighs, trunk and two upper extremities, with abolition of the cutaneous corresponding and tendinous reflexes, as well as of the superior and inferior cutaneous reflexes. Voluntary motility still exists in the muscles of the leg and foot. Plantar reflex is normal. There are no vesical or rectal difficulties. Temperature moves between 37° and 37.5° C.

These symptoms exclude all idea of rabies, and a diagnosis of *Acute Anterior Poliomyelitis* is made. During the following days the disease progresses, the paralysis invades the muscles of deglutition, the temperature goes up to 39.4°, the pulse to 170 and the man dies. The autopsy is made. The histological examination of the spinal marrow fails to show any of the characteristic lesions of poliomyelitis, no vascular dilatation, no hemorrhage, no disappearance of the radicular cells, no visible lesion of the anterior grey horn. But in the spinal ganglions there were found the cellular and pericellular lesions which are characteristic of rabies, which inoculated in rabbits confirm the nature of the case. There was no more doubt it was a rabid infection, and not one of acute poliomyelitis.

This case was interesting on several points of view:

1. The diagnosis was established by the histological examination of the spinal ganglions.

2. The complete absence of the period of excitation shows that dumb or paralytic rabies can occur from the start in man as well as in animals.

3. The long period of paralysis which lasted ten days shows that dumb rabies is a disease which has a slow evolution.

4. This case has developed clinically as one of ascending paralysis of Landry, whose pathological anatomy is yet imperfectly known.

* * *

NECROLOGICAL NOTICES.—Since the beginning of the year death has made a sad havoc among those members of the veterinary profession who have made for themselves a name in the pursuit of their professional duties.

The death of our dear departed Bell has received in some European papers friendly notices, showing that after all, scientific men are brethren all over, no matter in what country they may be. While America in February was paying her sad debt to the death call in losing Bell, England had to regret the departure of Joshua A. Nunn, Veterinary Colonel in the English Army. Born in Ireland, at Hill Castle, in 1853, he graduated in 1877 from the Royal Veterinary College and entered the army. He made campaigns in India, Afghanistan, British Burmah on different occasions, and in 1887 went to South Africa to study "horse sickness."

At the end of the African War he acted as general director of the veterinary service. In the last years of his life he has given his attention to journalism and contributed to the *Veterinary Journal* and the *Veterinary News*. Colonel Nunn was a good linguist, and was possessed of high scientific attainments. He was member of several societies.

The veterinary school of Utrecht lost in the month of March one of her professors, G. de Bruin.

Graduated in 1879 from that school, he carried private practice for fourteen years, and in 1893 was nominated by the Government of Holland to the Chair of Obstetrics. He had much difficulty in carrying on his work, but succeeded in making it

one of the best of that institution. He has published a work on Bovine Obstetrics and one on The Obstetrics of Small Animals. Prof. de Bruin died a victim of his profession. In operating upon the teeth of a horse he became infected, and his disease became complicated with typhoid troubles, which carried him off.

In Germany, in April last, the Superior Veterinary School of Munich lost Prof. Dr. Joseph Imminger. Born in 1854, after his graduation, he filled administrative positions for several years, and it is since eight years only that he became member of the Munich School, where he held the Chair of Surgery. Prof. Imminger was a very skillful operator and a clinician of first order. He published numerous articles in agricultural periodicals, and was preparing a work on Bovine Surgery when an attack of apoplexy carried him off at the age of fifty-four years.

In France, in the beginning of May, the School of Lyon had to mourn the death of Prof. Galtier, aged sixty-two.

After graduating from the Lyon School in 1873, he entered private practice for a few years and afterward joined the professorate, occupying up to the time of his death the Chair of Pathology of Contagious Diseases, Sanitary Medicine and Jurisprudence, for which he had prepared himself by special studies. Prof. Galtier wrote a great deal, and his publications are very numerous. His book on Sanitary Science, his treatise on Meat Inspection, his work on the Contagious Diseases, as well as his treatise of Veterinary Commercial Legislation and Jurisprudence are works which will remain classical for years to come.

But the name of Galtier has other reasons to be well remembered by veterinarians. Besides having been the first to demonstrate the inoculability of rabies to rabbits and thus giving to science a harmless subject for further experiments on that disease, it is to him that comes the honor of having been the first to show the possibility of *vaccination against rabies before or shortly after the bite of a rabid animal.* His method of vaccination, injection of rabid products in the veins, differed from that of Pasteur, but nevertheless the principle of the protection was established by him.

A. L.

THE A. V. M. A. MEETING.

In the short space of two months the veterinary profession of America will assemble in annual convention in Philadelphia. This is not, however, the first time for the association to meet in that city. If we look back into the history of the forty-five years of its existence we shall find that no less than two semi-annual, and one annual meeting, have been held in the City of Brotherly Love.

The first attempt at a meeting in Philadelphia was in 1870, when a semi-annual meeting was to have been held March 15 of that year. The records say, "no quorum," but as the child was only seven years old at the time, the neglect to transact business or to enter upon the deliberation or discussion of scientific problems may be put down to the natural condition of infancy.

In 1887, when the child had reached the period of maturity, another semi-annual meeting was held in Philadelphia on the 15th day of March. This was a "good" meeting.

In 1894, thirty-two years of age, the association met in annual convention in Philadelphia in the month of September. This was a "better" meeting.

Now, in 1908, in the full strength of its greater maturity and development, the A. V. M. A. is going to the same city. We predict that this will be the "best" meeting, in every sense of the term, ever held in Philadelphia—yes, in America. Everything at the present writing points to a meeting that will eclipse the best ever held on this continent, if not in the world. We say this advisedly, fully realizing what it will mean to excel the Kansas City meeting, as well as the best meetings held in foreign countries, for there are a number of extraordinary factors which are entering into and will be potential in contributing to the success of the forthcoming meeting.

The fact that the A. V. M. A. sessions will close in Philadelphia in time for the meeting of the Inter-State Association of Live Stock Sanitary Boards at Washington, to be closely followed by the International Congress on Tuberculosis, will

tend to materially increase the attendance at the respective meetings. The A. V. M. A. expect to have the honor of entertaining. at Philadelphia, some of the most eminent scientists of the old world.

Besides all this there is much to attract the progressive veterinarian to Philadelphia at this particular time, where an imposing wing, of what promises to be one of the most modern veterinary establishments in the whole world, is now nearing completion; to a state where the profession is organized to a man and where it is blessed by an intelligent and wise leadership; to a state where veterinary sanitary control work is under competent professional direction and where ample appropriations are made for carrying on the work; to a state that regulates effectually the practice of veterinary medicine and punishes men who attempt to ignore the prerogatives of the profession and violate the laws of the Commonwealth.

Pennsylvania has contributed a large share toward the development and upbuilding of the A. V. M. A. She has the proud distinction of having furnished three presidents—Huidekoper, Hoskins and Pearson—whose names will go down in the annals of veterinary history for what they have done and for their devotion to the best interests of the profession.

The fact that former President Hoskins is chairman of the local committee of arrangements is, in itself, sufficient guarantee of the thorough and satisfactory manner in which every detail will be arranged. He has associated with him on his committee a number of the kind of men who make for success. The neighboring State of New Jersey has appointed a special committee to wait upon Chairman Hoskins. with the object in view of rendering assistance in every way possible in the same fraternal spirit as Pennsylvania did in 1901. when the Veterinary Medical Association of New Jersey had the honor of welcoming the veterinary hosts to Atlantic City.

We publish elsewhere in this issue of the REVIEW, such data as Secretary Lyman is able to furnish at this time. together with

the program as far as is made up at the time of our going to press. In our next number we hope to be able to publish the program complete, names of officers and committees, portraits of officers, transportation rates, local arrangements and other information of interest and concern to the members of the profession. Get ready for Philadelphia and Washington.

THE VETERINARIAN AS A HORSEMAN.—On the occasion of the tenth anniversary of the completion of the famous New York Speedway, Dr. H. D. Gill, former President of the Road Drivers' Association, officiated as Grand Marshal at the annual Speedway Parade and Horse Show. Dr. Gill, driving the bay trotter, First Demand, led the line of march, preceded by the Speedway Squad of mounted policemen. Following the Grand Marshal were the officers of the association, each holding the reins over a fleet light harness horse. There were over one hundred fast trotters and pacers in line, divided into five divisions, the horses being grouped according to the character of the vehicles to which they were driven. As each driver passed the reviewing stand the judges, Mr. Francis M. Ware and Dr. F. C. Grenside, President of the Veterinary Medical Association of New York City, picked out the prize-winners and awarded the ribbons. The consensus of opinion was that the exhibition of light harness horses as a whole was better than at any previous New York Show, not excepting the National, at Madison Square Garden.

With the largest parade of the kind ever held in the state the Road Horse Association of New Jersey opened the season on the Speedway at Newark, May 16, which proved to be a most popular event. Four hundred horsemen participated in the parade and horse show. Aside from the personal interest of one thousand members of the association and their friends many other citizens gave abundant evidence that the popularity of the horse has not waned.

Among the vice-presidents is the name of Dr. William Dimond, formerly in the service of the Bureau of Animal Industry. Dr. Henry Vander Roest officiated as Grand Marshal to the satisfaction of everybody.

ORIGINAL ARTICLES.

SANITARY CONTROL WORK IN MINNESOTA.*

By M. H. Reynolds, *Professor of Veterinary Medicine, University of Minnesota.*

I have very willingly consented to discuss this subject because it is one in which I am very deeply interested. I believe the general subject of live stock sanitary work is certain to be recognized in the near future as one of vastly greater importance than many people now realize.

In order that I may not be misunderstood, I should add, perhaps, before saying more, that I am not now and have not for several years been in distinct personal charge of the work.

I was very willing to discuss Minnesota control work because I believe that it is as nearly ideal so far as plan of organization and general method is concerned as any similar work in America, but to be honest, I must add that our ideals of results are not reached by any means.

No difference how perfect a machine or how perfect the organization and general method of board work may be, its operation will surely be hampered by human imperfections of its members, and also by the shortcomings and human frailties of owners with which such a board must necessarily deal.

I may talk more freely of Minnesota because this is the work of which I am more intimately acquainted than with similar work of other states. Then, too, parents usually think their children are as nearly right and perfect as children can well be, so the Minnesota State Live Stock Sanitary Board which I helped to organize naturally appeals to me as being about right.

If I do lean a little toward Minnesota institutions, you will probably have little difficulty in detecting it, and in estimating about where the vertical would strike.

*A paper read before the Stockmen's Convention of Nebraska.

Importance—I can conceive of but two reasons for the existence of any live stock sanitary board or the office of state veterinarian. These are the protection of human health against the transmissible disease of live stock, and the protection of our live stock from disease and loss that may be prevented by intelligent sanitation.

Granting that either or both objects are or may be attained, then we have an important work.

No one will deny the great importance of this work; but sometimes it is worth while to ponder over what we already know. It is impossible to put into reliable figures an estimate of the value to this country of the sanitary work which but a few years ago eradicated foot and mouth diseases after it had become rather widely spread in our New England states. And this is vastly to the credit of our federal Bureau of Animal Industry.

Who can estimate and place in figures the dollars and cents value for the present and an indefinite future of the work which eradicated some years ago pleuro-pneumonia from the cattle herds of the United States?

The money spent by our government in eradicating these diseases can be but a trifle in comparison with the losses and difficulties that would have been encountered by reason of the presence of these diseases during a term of years.

Important discoveries in connection with the cause of Texas fever and the splendid work with this disease now under way in our southern states will serve to call attention to the possible vast usefulness of sanitary control work.

I will later give some figures and statistics showing something of what has been accomplished in my own state, and which may again call attention to the wise economy on the part of a state in appropriating generously for such work.

We have no reliable figures upon which to base the annual losses from hog cholera in the United States, but such figures, if they could be given, would unquestionably prove startling. I am satisfied that we have lost, within a single year, in Minnesota alone, from hog cholera, not far from $1,500,000.00. Sup-

pose that it cost twenty or thirty, or even forty millions to eradicate hog cholera from the United States, the amount would be small in comparison with the amount of savings through a long term of years.

We are to consider not only the matter of dollars and cents for the owners. There is a more important phase of this question. I refer to the relations of many infectious disease of domestic animals to disease of the human being. For instance, many of our best authorites now agree that the infection of human tuberculosis is usually received through the digestive tract, and that an important percentage of these cases come by infection of the child, or even older persons, through contaminated bovine milk.

Veterinary sanitary control work includes meat and milk inspection. Here we have a subject of such vast proportion and importance that I will not undertake to discuss it in this connection, but merely call your attention to it. Think of the millions of children who use milk as a staple article of diet every day. Some of that milk is contaminated with the manure of tuberculous cows or with dust of a stable where bovine tuberculosis, or lumpy jaw is prevalent. The losses from carcasses condemned on account of tuberculosis at our great packing houses, and from carcasses of hogs that are also being condemned at these places, has within a few years become a matter of such serious importance that the live stock breeders, packers and agricultural papers are seriously considering the question as to what can be done about it. Plainly this work is worthy of our earnest consideration.

Sanitary Work in Minnesota.

History—Our progress as a working machine has been a process of evolution. In 1897 the writer was made a member of the state board of health, previously composed entirely of practitioners of human medicine. Soon after the innovation just mentioned we arranged for a committee on disease of domestic animals. This later developed into a veterinary depart-

ment of that board, and funds available for this work were increased so that our live stock sanitary control work began to assume creditable proportions.

Early in 1903 the veterinary control work was removed by legislation from the state board of health and given in charge of the present live stock sanitary board, consisting of stock men and veterinarians.

When this work began, in January, 1897, with the appointment of a veterinarian to membership on the state board of health, there was available for control work with infectious diseases of animals the sum of $3,000.00 per year. At the next legislature this was increased to $6,000.00; a subsequent legislature raised the amount to $8,500.00, and successive legislatures raised our appropriation for this work to $13,000.00, $19,000.00, and $21,500.00. The legislature of 1904-1905 gave us a special appropriation of $30,000.00 for the succeeding bi-ennial period in addition to the standing annual appropriation of $19,000.00, making a total for that bi-ennial period of $68,000.00.

The legislature of 1906-7, in addition to our standing appropriation of $38,000.00, gave us a special approriation amounting to $130,000.00 for control work, reimbursing owners, etc., and $2,000.00 for the investigation of swamp fever, making a total for the bi-ennial period of $170,000.00.

Some of my hearers probably wonder what our board is doing with this sum of money, and perhaps wonder also where the graft comes in. I can assure you that there is no graft about it, and no opportunity for successful graft by those who control the fund.

Board members do no field work, and, in fact, are especially prohibited from rendering any service to the board for which they may receive compensation. We do not even receive a per diem for attendance at board meetings, but only actual and necessary expenses.

I will explain later more in detail as to what we are doing with this money. Suffice it to say for the present that it will be

expended very carefully and as judiciously as a board of five stock breeders and veterinarians are capable of doing.

It will go in part for salaries of our executive officer, field veterinarians and other employees who are doing the actual work, a small portion for office expenses and a very large proportion of the entire fund to farmers and stockmen.

Organization—Concerning our organization, I may say that the Minnesota board consists of five members appointed by the Governor. It is specified that three of these must be financially interested in the maintenance of live stock in our state, and that two members shall be competent and qualified veterinarians, graduates of recognized colleges.

One membership becomes vacant each year, so that there is no opportunity under ordinary conditions for sudden changes in the membership and reversals of policies. The board is as nearly non-political as such a board could well be because there is no financial gain through membership, but rather a financial loss to the extent of the value of each member's time consumed in attending quarterly meetings.

As stated, board members receive no compensation, not even per diem—only travelling expenses. Hence positions on the board will not ordinarily be sought for any reason except interest in the work with a willingness to devote time to it without compensation. I consider this one of the strong features of the plan, and would not, under any consideration, approve a change which would provide the possibility of financial gain for board members.

The board meets quarterly for consideration of the work accomplished during the preceding quarter and to plan work for the future, and to consider proposed regulations, amendments, etc.

The board selects from outside its membership a secretary who is the executive officer to carry out the work as planned by the board or provided by law. The law provides that he must be a graduate veterinarian from a reputable veterinary college.

It is thus seen that we have a veterinarian in authority 361 days in the year, carrying out plans of the board and provisions of the law. He does not originate important policies or issue original regulations unless authorized by the board.

We have also an assistant secretary, a young woman who has been with the work from its first organization, and whom the board members consider about as valuable an employee as we have on the staff.

The board also selects the field veterinarians, of which we now have four, a veterinary bacteriologist, and such other help as may be deemed expedient. These are not appointed by the board, subject to approval of a governor, nor selected by any boss, with a board compelled to accept.

The duty of this board is clearly and generously specified as follows:

> * * * "The board shall protect the health of domestic animals of the state, and carry out the provisions of this chapter, employing such means and making such rules as it may deem expedient to that end."

The only source of failure which the writer can see for a board organization in this way would lie in sheer incompetence of board members, and it is scarcely probable that any governor would appoint grossly incompetent men to places where there was neither financial or political gain or political influence.

The board, as thus far described, however, constitutes only a small central machine, for with this there is intimately associated, under carefully worded provision of law, about 2,500 local boards of health and health officers. In our state the township supervisors constitute ex-officio local boards of health, and these have certain important responsibilities in connection with our work.

It is expressly made the duty of local boards of health, and health officers, in the state, to co-operate with the live stock sanitary board in the prevention, control and eradication of

infectious diseases of domestic animals, as directed by the secretary of the state board or by any individual member of the board.

Two or more local boards may also be required in emergency to co-operate. It will thus be seen that we have agents in every township, village, town and city of the state, for whom the law specifies certain duties and who can be called upon by the state at any time for active assistance.

We also have a very satisfactory arrangement for co-operation with the federal Bureau of Animal Industry, through its inspectors at South St. Paul, and at various other places in the state where the government maintains inspection service. To illustrate this, if a lot of scabby sheep come into one of these places, they are promptly located by the government inspector and reported to our executive officer, together with all available information concerning the place from which they are shipped, if within the state. It thus becomes an easy matter for the sanitary board to locate the original outbreak and undertake the necessary work in suppression.

I think it will be clear that a board constituted like the Minnesota board should easily command the support of both the veterinary profession and the stock owners of the state, and when such a board does really efficient and economical work, it should have no serious difficulty in securing reasonable financial support from its legislature.

Important Features of the Law—The state board, also the local board, with certain restrictions, and within their respective jurisdictions, may quarantine or kill any domestic animal infected with or having been exposed to any infectious diseases.

Our state board is given a wide range of authority concerning killing or quarantining, importation, exportation of infected or exposed animals.

The law is explicit and severe concerning the importation of stock contrary to law or rules of the board, and provides a penalty of $500.00 to $1,000.00 for each offense on the part of railroads.

It is the legal duty of *any person* who knows of or has reason to suspect the existence of any infectious disease in any animals to notify the local board of health, and the latter, within 24 hours, must notify, in writing, the state board. Failure of either renders liable to severe punishment.

In case of animals to be killed, the owner is given all reasonable protection in the way of protest, appraisal, etc., but the protest does not delay the killing.

Tuberculous cattle or glandered horses are paid for when ordered killed and when the killing has been done according to law, which is very clear and explicit.

Penalties are sufficiently severe to prove efficient. Appraisal limits are fixed for cattle and horses. For cattle there is a certain limit, $35.00, provided for grade or what we would ordinarily call scrub stock, and another limit, $75.00, for pure bred and registered cattle. The limit for horses is $75.00.

Rules and Regulations—The law already given, it does not seem advisable to attempt giving detailed information at this time concerning our rules and regulations and established methods of doing the work, but our secretary would be very glad to furnish sets of these to anyone who cared to pursue the study. A brief mention may not be out of order in this connection. For instance, we have a circular of information for local health officers relating to tuberculosis in cattle. These advise local health officers concerning action in case of suspected outbreaks of the disease and concerning the law relating to tuberculosis and concerning other regulations which pertain to this disease.

We have a circular of similar instructions concerning hog cholera and special circulars concerning the quarantining of hogs suffering from infectious disease; there are rules and regulations concerning glanders farcy, giving instructions to local health officers and field veterinarians, concerning the details of quarantine and concerning the use of malein and disposition of affected horses or mules.

We use a blank for reporting the disease of infectious animals which, when properly filled out as ordered by law, gives very satisfactory information.

We furnish a blank certificate in which there appears upon the veterinarian's certificate and the owner's certificate relating to stock for importation.

We have similar circulars and regulations concerning rabies, also regulations for the guidance of common carriers doing business in Minnesota, and I may say that our law is so stringent that the railroads are showing a very profound respect for it.

Methods—I will have to omit most of the discussion which I had thought of giving in connection with methods and will only call attention to the fact that years of experience have brought us more and more firmly into the opinion that it is good control work to do a large part of the work directly out from a central office, using field veterinarians in direct employ of the state, and on full time, rather than local assistance or deputy veterinarians as employed in other states.

If there are veterinarians present, I will ask them to remember that I am compelled to look at this matter at present as a veterinary sanitarium, rather than as a practicing veterinarian.

I think the reason for our conclusion will be very apparent after a few suggestions; for instance, it should be borne in mind that much of this work is necessarily disagreeable and brings the doer into unpleasant relation with the owner.

A man in employ of the state has no private practice to jeopardize and no friends to lose by going straight ahead and doing his duty. I ask you to remember, however, that it is a clearly determined policy of the board to do its necessary work in the most courteous and considerate way possible. I believe that a man in the employ of the state, who is constantly doing this kind of work, and has, perhaps, had years of experience, can do this with less friction, and even gain friends for our work, where one less experienced would have a great deal of trouble and make enemies for the board, and lose patronage in private practice.

Then, too, men who are constantly at this kind of work will necessarily be more familiar with a wide variety of infectious diseases other than glanders and tuberculosis.

Men who are employed by the state on full time can make very much more thorough and competent investigation of an apparently new disease and make a very much more intelligent report concerning it.

Our policy with glanders may be given rather briefly. The original information comes from a local veterinarian, health officer, owner or neighbor. If investigation shows the presence of what we call clinical glanders, *i. e.*, a case which may be recognized, by careful examination, these are killed and the exposed horses are tested.

Horses which respond to malein test and show any clinical symptoms, are destroyed after appraisal. The owner receives three-fourths of the appraisal and is paid by the state. Other horses which react to malein but do not show clinical symptoms are kept under a form of quarantine and subsequently retested.

We have had this plan on trial for a number of years. In fact, Minnesota was the first public authority, so far as the writer is able to learn, to adopt the policy of testing all exposed horses with malein. After years of experience we are unanimous in the opinion that this is a wise procedure, and that it is absolutely essential to any effective method of dealing with this disease. The question as to whether it is wise to quarantine horses which react but show no clinical symptoms may be debatable. Minnesota will probably continue this plan for the present, however. The only satisfactory alternative appears to be that of killing all reactors, with compensation for the owners. This would require a much larger appropriation, and there are other rational arguments against the plan.

Our policy with tuberculosis is somewhat similar. When a herd of cattle has been tested and reactors are found these are usually appraised at the owner's place, and when there is any considerable number, are shipped to South St. Paul, where they may be slaughtered under government inspection. A consider-

able percentage of the carcasses are passed, which results in a large saving for the state, inasmuch as the state pays the owner three-quarters of the loss, *i. e.*, three-fourths of the difference between the appraisal and the amount realized for the carcass. The appraisal limit for horses is $75.00, for common cattle $35.00, for registered cattle $75.00.

Our work with hog cholera is along the lines of quarantine, coupled with public education concerning the infectiousness of the disease, and an endeavor to secure co-operation from owners, neighbors and local health officers. There can be no question but that an outbreak of hog cholera, under reasonably favorable conditions, will respond to proper sanitary measures. It is little to the credit of veterinary sanitation in practically every state in the union that hog cholera is ignored. Veterinary sanitarians have been operating on the idea that we can do nothing with it, and what is the use of trying.

Finances—During the present biennial period our board will have the serious responsibility of administering a fund of $170,000.00, made up, in part, of a standing annual appropriation and in part of special appropriations.

To present the economy with which this fund is handled and the general proportions of various expenses, I call your attention to the fact that during the last fiscal year, Aug. 1, 1906, to July 31, 1907, we expended a total of $79,121.06.

Of this there was paid to owners of stock.....	$63,409.29
Salaries of entire working force, including executive officer, assistant secretary, field veterinarians and veterinary bacteriologist.....	10,577.56
Traveling expenses of employees engaged in field work	3,894.90
Office expense and miscellaneous laboratory expense	701.76
Total paid the five board members for the year..	138.65
Services of veterinarians not regularly employed.	398.90
Total	$79,121.06

During the current biennial period our fund will be used in similar proportion.

I would call your attention to this connection that the present comfortable condition of our board finances of $85,000.00 a year is not a matter of mushroom growth, but rather of slow development. Our funds have passed through an evolution from $3,000.00 up to $85,000.00 a year, the increase having been gradual, which I think a decidedly safer procedure than large appropriations to inexperienced management. However, I would not advise that future boards organized on similar lines should begin with so small a sum as did the Minnesota board.

As the work grows there comes with it a very valuable experience in the way of administrative ability.

Some years ago one of our state legislatures became hypnotized and appropriated $250,000.00 for a certain live stock sanitary control work in a small state where the live stock resources were quite secondary.

This led to a very unpleasant situation and to serious discredit of live stock sanitary control work in that state and section.

It is a matter of unanimous agreement among poultry men that a very good way to develop the skill and ability to manage a large poultry plant successfully is to begin with a few old hens and develop experience and ability as the flock grows. I am satisfied that this same experience holds true with sanitary control work.

Results—I can easily imagine that my hearers are asking does the state of Minnesota get value received for the money? Well, the live stock values we are trying to protect with these funds amount approximately to $95,000,000.00. Let me call your attention to the fact that only small portion of the result of any sanitary board or health officer's labors can be put into figures.

There can be no possible way of measuring or definitely stating the harm or loss that might have resulted, had not outbreaks not been checked or threatening conditions promptly re-

moved. We may quote the number of tuberculous cattle or glandered horses that have been destroyed, but this, at the best, can only be considered as an index. The most important result accomplished are, certainly, the spread of disease checked, the financial loss averted and the number of human lives saved.

I will illustrate by a single point. We have had two demonstrated outbreaks of anthrax in Minnesota during recent years. In neither case was there spread of anthrax from the single farms whereon the outbreaks appeared. In order to appreciate the significance of this it is necessary to understand the very serious problem which frequent and widespread outbreaks of anthrax develop in other states.

Our men available for field work are as busy as men can be. Four of them are constantly on inspection service or out visiting reported outbreaks of recognized diseases, or investigating reports concerning supposedly new diseases. Four good men, well managed, in the field, must be doing an immensely important work.

To present the matter of results in another way, I would call your attention to the fact that there were tested in Minnesota, under the supervision of our board, during the fiscal year 1905-6, 13,707 cattle, of which there were killed 1,438. During the year 1906-7 there were tested 18,022, of which there were killed 1,165.

Our figures for work with glanders show as follows: Number of horses tested with malein during the year 1905-6 were 3,322; killed, 606. During the fiscal year of 1906-7 we paid to owners of horses and cattle the sum of $63,409.00.

The last government report, Bureau of Animal Industry, 1905, shows that Minnesota is by a considerable margin the largest user of government tuberculin, using approximately one-fourth of the total output in a list of 33 states for which report is made. This same report shows that we are using one-third of the total output of mallein, or four times as much as any other state in a list of twenty states reported, barring the District of Columbia.

It is not that we have more of these diseases than other states, but rather less, for Minnesota has been making an active campaign of this kind for several years, and there is no reason for supposing that in the first place Minnesota was worse contaminated.

Difficulties—Difficulties are many. Some problems are too big for our funds. It is difficult to prevent importation of diseased stock from other states into clean neighborhoods. It is difficult to get owners and neighbors to report instead of hide, trade off or sell. It is difficult to deal thoroughly and economically with glanders without having on hand a very large number of cases which it does not seem advisable to either release or destroy. There are numberless difficulties—difficulties great and grave—enough to make the battle very interesting.

A grave difficulty for the present and near future threatens to be that of preserving a rapid yet satisfactory and conservative progress in public sentiment concerning tuberculosis. There is a strong tendency toward radical and, perhaps, unwise action. We had a choice collection of freak bills in the last legislature, which proposed to deal with the subject of tuberculosis in cattle.

One of the chief difficulties comes in connection with infectious disease, which come over the line from other states; for instance, fresh infections of hog cholera come across the line from Iowa.

Until we adopted regulations which were later put into law, concerning the importation of certain horses from other states, we were constantly bothered with fresh outbreaks of glanders in the western portions of the state.

In our cities the chief difficulties are with glanders and tuberculosis.

The difficulties in our municipal work in connection with tuberculosis are chiefly in connection with the tuberculin test work. I cannot discuss them, or explain in detail how we are attempting to deal with them, but will suggest a few as typical; for instance: There is difficulty in permanently marking tested

cattle to prevent fraud; difficulty in arranging to have tested stables refilled with tested cattle; difficulty in having the herd from which milk is sold for the public supply tested frequently enough; difficulty in some cases on account of incompetence of employees used by the local board of health.

Present Situation—To briefly present the sanitary situation in our state, I must illustrate by selecting a few features which, if carefully considered, will be quite suggestive. Our state dairy association, at several annual meetings, during the last few years, has endorsed the tuberculin test without a dissenting voice and called upon the legislature to provide legal means whereby stock sold for breeding purposes should be sold with tuberculin test or subject to test.

A large proportion of our Minnesota breeders now insist on buying cattle on tuberculin test, or not at all. A large and rapidly increasing number of our cattle breeders are voluntarily having their herds tested, offering us more work and more expense than we can provide for.

St. Paul, Minneapolis, Duluth and a considerable number of our smaller cities now insist on tuberculin test of cows supplying milk for sale under license.

Our farmers have a much more intelligent idea concerning hog cholera now than ten years ago, when our work was commenced. It is now universally recognized as infectious and fairly well understood concerning its method of dissemination.

Our horse owners are not so commonly spreading glanders and making the work of dealing with this disease indefinitely more difficult and less efficient by hiding their suspicions, or by disposing of their glandered horses, and passing them along to infect fresh stables, since it is now commonly understood that the state will treat them fairly and they will be partially reimbursed if the suspicion is reported and the animal subsequently destroyed.

Progress in sanitary work with bovine tuberculosis during the past fifteen years has been painfully slow until the last very

few years. At present we are threatened with something like a landslide, which will require a great deal of tact and common sense to deal with wisely.

Suggestions—There are numerous and large portions of the veterinary sanitary fields which have never been touched. Our best work with hog cholera is yet crude and imperfect. Our work with cattle mange and scab is not as well organized and efficient as it might easily be. It has been altogether too much the custom for sanitary boards and state veterinarians to pay no attention to such diseases as hog cholera and infectious abortion because they present difficult problems. Veterinary sanitary work in connection with the meat and milk supply, particularly the latter, has never been developed as it must be in the near future.

I hope that hog cholera may soon be recognized as a disease which sanitary authorities should deal with vigorously and from which they may hope to secure satisfactory results. Anyone at all familiar with this kind of work knows that the control of hog cholera must necessarily be very expensive work, *i. e.,* expensive in total dollars used, but not necessarily expensive when the annual losses and the volume of business involved are considered.

Can there be any question but that the appropriations usually provided by states for veterinary control work have been inadequate and very unwisely so? Can there be reasonable doubt that this money, when intelligently used, is capable of bringing to the state an interest not earned by many of our public investments?

Consider for a moment the entire live stock values of Nebraska, and what would an annual appropriation of $50,000.00 a year be for your sanitary control work?

Perhaps some of my audience is saying, "But how did you get so much money; that is what we are anxious to know." Well, in the first place, we have not so much money. The total money appropriated for veterinary sanitary control work in

Minnesota is not a large amount for the work. Our total live stock interest amounts to about $85,000,000.00, and our appropriation is only .0007 of this amount, or .07 of 1 per cent., and it is important to remember that our live stock interests are not the only ones affected by the prevalence of an infectious disease, or even a threatening probability. Directly or indirectly, a large proportion of the other financial interests of our state are involved. Our appropriation is but trifling in proportion to the interests which we are protecting with it.

But you are still saying, "Yes, but how did you get the money?" I have been asked that same question by state veterinarians and sanitary officers of several states. The answer is simple. As already explained, it has been a process of evolution.

In order to secure large and increasing appropriations, continued through any number of years, it is absolutely necessary that the veterinary sanitary authorities must do efficient and conscientious work. Such funds must be handled with the most scrupulous honesty and managed so as to bring the best possible returns for the state making the investment.

It is necessary for such authority to have the backing of the live stock interests of the state. Repeated endorsements of live stock associations, state dairy associations, etc., are very useful.

We ask the legislature for money, showing the proper records of just what we have done with our money in the past and just what we expect to do with what we are asking for. We make it a point to secure the friendship and personal interest of each stock owner with whom we have dealings.

I believe it is a fair statement that the Minnesota board has the full confidence of Minnesota stock owners, and the loyal support of Minnesota veterinarians in its work, conditions which are absolutely essential. Is not this clearly shown by the financial support which has been accorded to our sanitary board by our successive legislatures?

We ask the legislature for money and our friends write in or telephone in that the sanitary board must have their appro-

priation, and that is all there is about it. We work hard and get our friends to work. The secret is out now. You have the entire formula.

If there is anything that Minnesota could do to help Nebraska to get an annual appropriation from the next legislature —to be increased gradually to $75,000.00 or $100,000.00 after a few years—we would be very glad to know it.

"THE REVIEW gets better with each number. It is the best veterinary publication in the world. Accept my sincere congratulations."—[*H. S. Richards, Veterinarian, Pittsburg.*]

A HUMAN FAILING.—"Pa, what is the meaning of inconsistency?" asked Freddy.

"Inconsistency, my son," explained pa, "means a man who growls all day and then goes home and kicks the dog for barking at night."

PRESIDENT ROOSEVELT LOYAL TO THE HORSE.—When asked concerning a report that he intended to buy an automobile, the President is quoted as saying: "Not as long as there are horses." It is an answer in perfect harmony with the accepted idea of the President's temperament. His experience out West as a broncho buster, his experience in the East as a hunter, his habits in Washington as a horseman, prove him to be a lover of horsemanship above all else in the way of outdoor exercise. One of the most striking, as well as most familiar, photographs of the President represents him mounted on a favorite steed taking a high jump over a gate. This is characteristic. It is a veritable index.

The President likes the movement of the animal under him. He likes the animation and the spirit with which as a rider he comes into contact. He likes the struggle between himself and the beast, the contest between two varied natures. The sensitive, responsive, leaping, breathing thing under him refreshes and inspires him.

It is the sensation of the horseman that he clings to. Mere getting over ground is not all. If simply covering distance swiftly were the great desire the automobile would displace the horse in his affections. His devotion to the horse under the circumstances is as comprehensible as it is reasonable.

THE STATES AND VETERINARY ENLIGHTENMENT.

What the Several States Do, or Fail to Do, for the Furtherance of Veterinary Intelligence and Education.

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America has always had, and now has, an unshaken faith in the intellectual enlightenment of the people through a public education which allows any person, native born or foreign born, to rise, if he will, on each step of the ladder, from the rudiments of any subject capable of being taught, to the highest university training. The agricultural interests and the veterinary interests are one. Hence, a national system of agricultural education having been adopted as part of the education for the general public, to be furthered by the individual states under federal aid, whether by popular methods or scholastic methods, it follows that state veterinary education will be an outgrowth of state agricultural education. As agricultural education advances in the several states the need for state veterinary education becomes more obvious. The history of agricultural education in this country, from the Morrill Land Grant Act of 1862 to the present time, bears me out in this statement. As agricultural enlightenment increases, particularly intelligence on animal industry, veterinary knowledge and service becomes more appreciated and state veterinary education follows.

Profoundly impressed as I am with these truths, I take it that every thoughtful American veterinarian interested in the drift of veterinary affairs everywhere in the land, will have his attention riveted on recent facts and intelligence on what the states severally are doing, or are failing to do, for veterinary enlightenment.

Lately it has been my pleasure to devote many months of study to the subject with a threefold purpose: to determine what is being done at present by each state and territory, whether

by scholastic methods or popular methods, for veterinary intelligence and education; to note any tendencies looking towards the establishment of curricula, in a separate state veterinary college, in a new college connected with the state university, in the agricultural college, or otherwise, for the purpose of training veterinarians for work within the state; and, finally, to offer any suggestions which presented themselves for action on the part of the various American veterinary organizations, looking towards the furtherance of veterinary intelligence and education in the commonwealths.

A complete report of this investigation will be found in the proceedings of the American Veterinary Medical Association for 1907. But the subject of the advancement of veterinary intelligence within the confines of the states, and the education of future veterinarians through the funds of the state exchequers—on the one hand, the popularization of veterinary intelligence; and, on the other, the schooling of men to be veterinarians, where the school is paid for by state taxation, scholastic veterinary education—should have interest for thousands other than the eight hundred men who, at present, comprise the American association. That is shallow and perilous thinking which makes veterinary education a mere matter of business venture on the part of an individual or a private corporation—shallow, because it does not see that the spread of veterinary intelligence and the fostering of veterinary education is a lofty question, in its very nature involving public interests; perilous, because it persists in putting private and individual interests above public interests, to the detriment of a profession, the dignity of which consists in its usefulness to public, as well as animal, health and wealth. Indeed, a close study of what the several states are doing for the furtherance of veterinary intelligence and education, if it demonstrates nothing else, will demonstrate the actuality that the education of men to care for the live stock interests is being recognized as a public duty, and that the doctrine is spreading that this education should be made art of the permanent policy of each state.

In reviewing the present relation of the state governments to veterinary education, we may as well inquire into the unpleasant, as well as the pleasant, features of the subject. The pleasant features may be spoken of as: things profitable for the veterinary profession in state activity at the present time for the furtherance of veterinary education and intelligence. Then we may speak of certain conditions in the states at the present time detrimental to the veterinary profession, or unprofitable for it.

I.—Things Profitable for the Veterinary Profession in State Activity at the Present Time for the Furtherance of Veterinary Education and Intelligence.

Veterinary Teaching—This naturally divides itself into two parts, the scholastic, or that for students who come to the state college or university in pursuit of veterinary knowledge, the popular, that done through various agencies for persons up and down the state who do not enter an agricultural or other state institution for that purpose. The scholastic work, the purpose of which is not, in the main, to train veterinarians, but to help agricultural students to understand veterinary principles, first aid, control work, etc., is given to winter students in agriculture, farmers or farm boys who spend two to six weeks at the college, to agricultural students spending two years, to agricultural students spending four years at the college. The winter man receives a few lectures; the two-year man takes much veterinary work the second year; the four-year man takes much veterinary work for two years and usually may elect more. The tendency is, by the addition of teachers, laboratories, hospitals, and other equipment, for the state agricultural college to offer more and more veterinary work in the junior and senior year or a post-graduate year. Later, the development is towards a three or four years' course in veterinary science leading to a degree. Colorado and Alabama are the latest to offer such a course, each beginning 1907. Courses leading to a veterinary degree were established in state institutions as follows: Iowa, 1879; Pennsyl-

vania, 1884; Ohio, 1890; New York and Washington, 1896; Kansas, 1905; Colorado and Alabama, 1907. The total number of winter and two-year agricultural students last year was 3,885; of four-year agricultural students, 2,638. When it is remembered that most of these were required to take work in veterinary science, it is easy to see how veterinary knowledge spreads, the veterinarian becomes appreciated. Such work builds up public opinion in favor of veterinary courses with degrees in agricultural colleges, state universities or separate state veterinary colleges.

Veterinary Investigations—These, for the states, are usually made by the veterinarians of the agricultural colleges. The experiment stations are usually departments of the agricultural colleges. When this happens to be the case, the veterinarian is professor of veterinary science and experiment station veterinarian, or merely consulting veterinarian to the experiment station. In some states the investigations are made by a separate pathologist (Arkansas), or bacteriologist (Michigan), or by a veterinarian aided by a chemist and bacteriologist (Maryland). If the work is done by a veterinarian, or under veterinary direction, it usually redounds to the good of the veterinary profession.

Veterinary Sanitary Work—The veterinarian of the agricultural college, working individually for the commonwealth, or in connection with a state board of health, or state sanitary commission, is apt to have a strong hold on state veterinary sanitary work, usually as state veterinarian or assistant state veterinarian (Alabama, South Carolina, South Dakota, North Carolina, North Dakota, Kansas, Indiana, Virginia, Washington). In some of the southern states the college, through its veterinarian, has control of live stock sanitation in the state. This brings very heavy burdens upon that state officer; but he gloriously shoulders them. In many of the states the veterinarian of the agricultural college does a vast correspondence on animal diseases, makes diagnoses or pathological determinations. All these things strengthen veterinary interests and incite appreciation of veterinary work in the states.

Veterinary Extension Work—In many states the veterinarians of the agricultural colleges have written short popular reports, or discussions of diseases causing havoc among live stock, and have had them scattered broadcast. Farmers' institutes have been organized in each state and territory under the direction of the state secretary of agriculture, or the experiment station officers (the usual thing), to give farmers the benefit of popular talks by experts. These have aided in the propagation of veterinary intelligence. The veterinarians of the agricultural colleges and experiment stations give lectures at them on control of diseases, or simple remedies, or they make demonstrations. These assemblies of farmers are now well organized and thousands attend the numerous sessions in all corners of the states.

Veterinary Publications—In the body of my paper, published in the Proceedings of the American Veterinary Medical Association, 1907, I submit lists of the veterinary publications of each state, as far as they could be learned, done during the last few years. The dissemination of information on veterinary matters, whether in pamphlet form, bulletins, press reports, or articles for the newspapers, is, to speak veraciously, enormous in quantity. The volume of state veterinary papers depends chiefly on the fruitfulness of the minds of the veterinarians and the financial aid given by the states for that end. The United States reports show that, for the last year alone, six and one-half millions of copies of papers on agricultural topics were sent out by the several states to a mailing list of 751,000 readers. When one remembers that most of the states produced one, to three or four, veterinary papers, and that many thousands of these papers were sent out, it is easy to see that not the smallest part of the total of six and one-half millions of copies of bulletins, press reports, and other pamphlets, distributed by the agricultural departments of the states last year, were veterinary papers. The state veterinary officers are learning the rich results which are to be obtained by incessant pamphleteering on veterinary subjects.

State Veterinary Buildings and Equipments—It would be an interesting thing to collect data on buildings and equipments held by the state agricultural colleges and experiment stations and other state institutions, for veterinary purposes. The states are in possession of veterinary hospitals, laboratories, lecture rooms, museums and collections sufficient to carry on the veterinary work that they advertise. Though most of us do not know about it, the state legislatures are granting moneys for further veterinary equipment. For instance, Texas agricultural college has just received an appropriation of $5,000 for a veterinary hospital, Kansas agricultural college has obtained from the state a few months ago $70,000 for a veterinary building. Though the munificence of the legislature to the state veterinary work of Pennsylvania excites our warmest admiration, $200,000 having been voted by the state legislature during the last two years for buildings alone.

To summarize, the states are doing a vast work for the furtherance of veterinary education and intelligence—in the popularization of veterinary knowledge through the agencies of the press and the lecture platform, through veterinary investigations and sanitary work; most of all, perhaps, by the propagation of veterinary principles in the required work at the agricultural colleges, where the student body, what is to be the most intelligent farm element, is fashioned in a high appreciation of the veterinarian and his work. The duty of each state is to train the veterinarians it needs for the work within its own confines. If a state needs men it should train them, not call on other states, or a veterinary college elsewhere, to send it men. A number of the more enlightened states already have started this work, others are within a step of a full college course, still others are advancing towards that end. Let the states educate their own veterinarians. Let the state institutions, however constituted, and the state officers who train the veterinarians, be responsible to the state government for the adequate equipment of the veterinarians for their life work. Let each state round out its veterinary ideals for itself, stimulated and guarded by the leading

minds represented in the American Veterinary Medical Association, now and as time goes on.

II.—Certain Conditions in the States at the Present Time Detrimental to the Veterinary Profession, or Unprofitable for It.

1. The attention of veterinarians throughout the country is hereby drawn to the fact that, in a number of states, unqualified men, those not trained in the medical sciences (and therefore not veterinarians nor doctors of human medicine) are writing papers on veterinary subjects at the experiment stations. In my investigation I was careful to inquire into the "official titles, duties and work" of those in the agricultural colleges and experiment stations who have been writing papers on veterinary subjects, and I found, in several instances, unqualified men doing the work for the state experiment stations. I have carefully examined the Hatch and Adams Act, under which the experiment stations were established and endowed, and I declare openly that in my ponion the permitting of unqualified men to do such work is contrary to the spirit and purpose of those acts, and I called upon the American Veterinary Medical Association, in Kansas City, last autumn to see that the proper authorities of the association draw the attention of the Secretary of Agriculture to the state of things and to inquire what his interpretation of the law is in this case. Consequently the following resolution was passed unanimously by the association last September:

Unprofessional Writers of Veterinary Bulletins.

Whereas, In a number of the states men not graduates of recognized veterinary colleges are at present writing bulletins on veterinary subjects and are sending them out as state publications from the state experiment stations, therefore be it

Resolved, That the proper officer of this association ask the Secretary of Agriculture what is his interpretation of the Hatch and Adams Acts in this matter and whether it is, in his opinion, in conformity with the federal law.

If, in branches of the federal service, where veterinary knowledge is called for, for example the United States Meat Inspection Service, graduates of recognized veterinary colleges are the only ones admissible, the first question to be determined is, the legality or illegality of disbursing parts of the federal grants, authorized in the Hatch and Adams Acts, to men not graduates of recognized veterinary colleges, to render pseudo-professional service, in lieu of graduate veterinarians, should the director of any experiment station, in his blindness, see fit to employ one. It is to be hoped that the Secretary of the American Veterinary Medical Association, who seems to be the proper person to communicate with the Secretary of Agriculture in this matter, will be able to get a decision, that the association may act accordingly. It seems likely that the present Secretary of Agriculture, who is well known to be a friend of the veterinary profession, the grand old man who is executive officer of the Department of Agriculture, who took cognizance of the opinions of the national association when the question of a successor to Dr. Salmon came up for settlement, will give wise consideration to the proper interpretation of those portions of the Hatch Act which refer to the veterinary work proposed for the experiment stations and the accountability of the directors to him.

The Hatch Act reads: "That it shall be the object and duty of such experiment stations to conduct original researches or verify experiments on the physiology of plants and animals, the diseases to which they are severally subject, with the remedies for the same * * *."[1] This is the first part of the first sentence of the first section of the law which details the object and duty of the experiment stations. The important place, at the beginning of the section, in which reference is made to research in veterinary physiology, pathology and therapeutics, emphasizes the importance of those subjects in the mind of the framer of the law. How the research work, called for by the law, can be done other than by an accomplished veterinarian,

[1]Public—No. 112, Sect. 2, Approved March 2, 1887.

passes my understanding. The law requires that the person who does research work on the physiology, pathology and therapeutics of animals, shall embark on original lines, as that is his bounden duty, and, as far as he is concerned, the object of the experiment station. The abstruse questions, which arise in experimentation of this sort, cannot be thought out by any other person than a man thoroughly trained in the medical sciences bearing on domesticated animals.

The work of unqualified men on veterinary subjects can only be compilation or hodge-podge at best. The judgment of unqualified men on facts in veterinary medicine is not professional and may be a menace to the interests of live stock. This is a form of quackery, and intensely so when such men take it upon themselves to write on contagious diseases. This kind of thing has been going on in Arkansas, Georgia, New Mexico, possibly, West Virginia, possibly, and in Wyoming. There are two excellent veterinarians doing work for the state in Arkansas, Drs. Dinwiddie and Lenton, yet the director of the experiment station, W. G. Vincenheller, has written press bulletins on Texas fever, work which should have been done by the veterinarians. Georgia has an excellent state dairyman in Professor C. L. Willoughby, a man who commands my respect for his large intelligence; yet even he, I feel, would admit that it would have been better if a graduate veterinarian did the strictly veterinary writing for Georgia instead of himself. New Mexico and West Virginia are suspicious. In Tennessee that enlightened entomologist, Professor H. A. Morgan, has done excellent work on the Texas fever tick. The station of which he is director now has a veterinarian, who collaborates with Professor Morgan in studies touching veterinary science. Yet in 1906, after the appointment of Dr. Jacob as veterinarian in 1905, the director published a bulletin on "Cattle Tick Eradication," when the qualified veterinarian could have done the work. Wyoming has, in the person of G. E. Morton, M. L., B. S., "Assistant in Animal Industry," a man who paraphrases the works of Dr. James Law on "Abortion" and "Scours in Calves," and that of Dr. G. H.

Glover on "Poisonous Plants," sending them out under his own signature in "The Ranchman's Reminder," seemingly an agricultural college paper, as so much work on veterinary science done for the state. The question is not, is the work of these men good and useful in itself, but *is it true to the spirit and purpose of the Hatch Act, and should not veterinary work in the experiment stations of the states, more particularly veterinary research work and the verification of experiments, be done by a professional man who devotes his life to that work?*

2. A number of the states have no veterinary department in their experiment stations and no veterinarian on the force. The plea, in excuse for this kind of thing has been, that, under the Hatch Act, the funds were inadequate, and that the grants were used in experimental work along other lines. The attention of the veterinary medical associations of each state, and of the large body of American veterinarians, should be drawn to the fact that this excuse is no longer applicable and that the time is ripe for the veterinary profession to see to it that experimental work, along the lines indicated in the Hatch Act, be carried on *in each state and territory,* as well as by qualified men. Under the Adams Act, which became law 1906, the federal grants, for each experiment station in each state, are to be gradually increased each year for five years, beginning 1906, from $15,000 per annum until that sum reaches $30,000 per annum.[2] Here is an excellent opportunity for the veterinarians of the states, through their professional organization, to push their claims and to demand that original investigation or verification of experiments in veterinary physiology, pathology and therapeutics be undertaken, if not already done, in the state experiment station, by a thoroughly qualified graduate veterinarian, receiving payment from funds granted under the Adams Act. As the moneys granted under that act must be devoted entirely to research, each experiment station should have a veterinarian within five years.

[2]Public—No. 47, Sect. 1, Approved March 16, 1906.

Montana and Idaho, through this benefaction, will place veterinarians in their experiment stations. West Virginia, Florida, Connecticut, New Hampshire and Wyoming should do the same thing, if the provisions of the Hatch Act and the Adams Act are to be carried out. As the experiment stations, in these states, are connected with the agricultural colleges, and as veterinary experimentation and research would not be burdensome, the professors of agriculture in them would be relieved from teaching veterinary subjects, which is now outrageously saddled upon them. Veterinary work, in those states, will then not be perfunctory, as it is now, but be specialized and intelligent. There is a smack of quackery in the announcements, at present, for instance, of Professor Clotier, of Florida, that he lectures on veterinary science; of Professor J. J. Hooper, assistant professor of animal industry in Kentucky, that he talks on the theory and practice of horse-shoeing; of Professor E. L. Shaw, associate professor of agriculture of New Hampshire, that, among other things, he talks "on holding a post-mortem" and "infectious diseases affecting farm animals, their causes and methods of treatment"; of G. E. Morton, assistant in animal industry, Wyoming, who lectures on "veterinary medicine and therapeutics." Surely it is difficult enough for a trained veterinarian to hold a good intelligent post-mortem, without an associate professor of agriculture attempting to do that work, or, at all events, attempting to try and teach men to conduct one. When the blind attempt to lead the blind, both will fall into the ditch—agriculturalist and student will fall into confusion.

In brief:—

1. Persons, not graduated at recognized veterinary colleges, should be prohibited from feeble and futile attempts to do research work in veterinary physiology, pathology and therapeutics, at the experiment stations.

2. Researches, in these veterinary subjects, should be installed in the experiment stations, where none are now to be found.

THE DISPOSITION OF TUBERCULOUS CATTLE.*

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In presenting for your consideration some thoughts upon the disposition of tuberculous cattle, I shall assume that you are all familiar with the disease, its character and importance. For this reason it will be unnecessary to burden you with a discussion of this phase of the subject, further than to state, that it is a peculiarity of tuberculosis that extensively diseased animals may, and often do, appear to be perfectly healthy, and it is this peculiarity which makes the handling of the disease such a difficult problem. Or to put it in other words: The great difficulty in dealing with tuberculosis lies in the fact that most men cannot understand or will not believe that an animal that eats and drinks heartily, that looks and acts as if healthy, that grows or lays on flesh readily, can be seriously diseased, yet this is the case. Animals, apparently healthy, are often tuberculous. When the average stock raiser comprehends this, the solution of the problem of the control and eradication of this baneful scourge will be more easily solved.

I base this statement upon the fact that whenever any acutely contagious disease, such as anthrax, black-leg, Texas fever, etc., make their appearance, steps are at once taken to stamp them out. If such action should be taken with these, it is much more important that similar action should be taken with tuberculosis, which causes an annual loss in this country many times greater than all the other contagious diseases together, and which is now allowed to continue its ravages with practically no action being taken to eradicate it, or even to control its spread. How do you account for this peculiar condition? I explain it in this way: The acute diseases produce a train of symptoms showing clearly that the animals are sick, and the usually large and rapid death

*A paper read and discussed before the Interstate Breeders' Association.

rate demonstrates the necessity of prompt action. With tuberculosis it is different. The disease progresses very slowly and the symptoms are practically invisible except in the last stages. In the one case all understand the animal is diseased while in the other, the average man does not comprehend the condition and is loath to believe that the animal is diseased.

I am glad to say, however, that progress is being made, and that the average stock raiser is beginning to grasp the situation. The raiser of healthy stock is beginning to wonder why he should continue to help pay the losses of his neighbor who is raising diseased animals, for this he does under the present system of marketing.

Before taking up the principal part of my theme I wish to direct your attention to one very essential and vital point, the diagnosis of tuberculosis. In eradicating or controlling the spread of acutely contagious diseases, which have a short and somewhat definite period of incubation (the time elapsing after an animal is exposed, before it presents symptoms of the disease), it is not absolutely essential that an accurate diagnosis be made, because the disease can usually be stamped out by quarantining the infected herd or herds until the disease has run its course. But with a disease that has no distinct period of incubation and one that develops as slowly as tuberculosis usually does, quarantining is not practical, more especially when the disease is so widespread and so prevalent as tuberculosis is. Therefore the first essential step in any plan looking to the control or eradication of tuberculosis is a correct and accurate diagnosis. This is absolutely essential in order to become reasonably certain which animals are and which are not affected, and thus make it possible to separate the diseased from the healthy cattle.

With our present knowledge of tuberculosis there is but one accurate method for diagnosing the disease in the live animal, and that is the tuberculin test. Strange as it may seem tuberculin, when properly used, is one of, if not the most accurate diagnostic agents known to medical science. Hence we may state that the first essential in the work of controlling or erad-

icating tuberculosis is to test the cattle of infected herds. This work should be done by thoroughly reliable and competent men, preferably under the direction and supervision of the state veterinarian.

The testing of animals is a comparatively simple process in itself, but it leads to the very serious and important question: What shall be done with the diseased animals after they have been discovered? The two general plans that have been and now are being generally followed may be termed the "slaughter method" and the "Bang method."

The slaughter method has been variously modified at different times and places, but the one central principle has been that the diseased cattle must be destroyed within certain periods, according to the conditions prevailing at the time and place of the test. The cattle may be slaughtered at once or they may be fed for a time and then slaughtered. In some instances the cattle are appraised at a valuation of healthy stock. They are then destroyed by the state, burned or buried, and a certain percentage of the appraised valuation is paid by the state.

In other instances the cattle are appraised as above and then sold for slaughter, subject to post-mortem inspection, the state making up the deficiency between the fixed percentage of the appraised value and what the cattle bring for meat. In still other instances the owner is compelled to sell his affected cattle for slaughter, subject to post-mortem inspection without any reimbursement from the state. In the latter case the owner receives only the meat value of the affected cattle. All these methods are more or less wasteful and unsatisfactory, especially when dealing with valuable breeding animals. It has been demonstrated that the disease usually progresses so slowly that most animals will live from two to five years after becoming infected, especially when the cattle are kept under favorable conditions rather than under conditions favorable to the tubercle bacilli.

During most of the lifetime of tuberculous animals they are capable of breeding and the cows will raise their calves and give

milk nearly as well as if they were not diseased, and yet, strange as it may seem, such animals are the ones that generally spread the disease to healthy individuals.

Taking advantage of these facts, Prof. Bang, a veterinarian of Denmark, worked out a method known as the "Bang method," whereby tuberculous cattle may be safely kept so long as they prove useful. They are not slaughtered until they begin to show physical symptoms of the disease or become unprofitable. Under this method a tuberculous herd, by means of the tuberculin test, is separated into two parts, a healthy and a tuberculous portion. These herds are then kept separate and under conditions that will prevent the disease being carried from the affected to the healthy cattle.

When a cow in the tuberculosis herd drops a calf it is immediately taken away from the dam and fed upon the milk of healthy cows or upon the milk of its dam after having been thoroughly sterilized. Thus the healthy herd is gradually built up, while the tuberculosis herd gradually grows smaller and smaller, until the disease is finally eradicated from the farm.

By a wide application of this method tuberculosis is gradually being eradicated from the herds of Denmark without great cost to the government, or serious loss to the owners other than the trouble incident to keeping two herds upon the same farm under proper conditions. While the method has been followed with gratifying results in Denmark and some other European countries it is not very well adapted for this country, because of our different conditions and of our different methods of stock raising. At any rate it has not as yet found much favor in the United States.

Most breeders do not have the time, the inclination, or sufficient knowledge of sanitary science to enable them to successfully carry on the work, without the supervision of an expert. Another class of breeders do not wish to be burdened with the trouble and expense of keeping two herds.

Again many of our herds are so small that they would not be profitable if divided and kept in two separate and distinct places.

Perhaps the objection most frequently advanced against the Bang method by the breeders of pure-bred cattle in this country is the fear that it would ruin their business if the public became aware that their herds were affected. This arises from the belief that there is a general prejudice against animals coming from herds known to have been affected and especially against young animals from tuberculous stock, on the grounds that if the animal is not diseased at the time of sale it will be more liable to contract the disease. While this principle is true to the extent that animals from tuberculous progenitors may be more susceptible to the disease when brought in contact with the germs, it is not true if such stock is kept away from them. It should be borne in mind that tuberculosis cannot be produced unless the germ of tuberculosis is introduced into the system, and consequently, when such animals are kept in healthy herds the possibility of their contracting the disease is very small. It makes, however, a very plausible point of objection to the introduction of any method looking to the control or eradication of the disease.

Another point: The Bang method has found but little favor among state or federal officials, because the expense of maintaining the necessary supervision of the infected herds, to enforce the proper carrying out of the work, and to prevent the unscrupulous from taking undue advantage of conditions, would be so large as to be burdensome. For these reasons the slaughter method has been the one most in vogue in this country, but it has been demonstrated that this method is ruinously extravagant, and in some respects detrimental to the cattle industry, because of needless destruction of many animals that are valuable for breeding purposes.

With these facts in mind it has occurred to me that many of the objections to both the Bang and slaughter methods can be obviated by the farmer and breeder leasing their tuberculous breeding cattle to the state or county upon the increase plan. The plan in general would be as follows: To have a specially arranged farm in various sections of the state or in each county

if necessary. In this connection it might be stated that most counties now have a farm commonly known as the "Poor Farm," a portion of which might be set aside for this purpose. In case this should not be practical another farm could be secured by purchase or lease. The state veterinarian should test all herds that are known to be infected or that the owner might request to have tested, and upon completion of the test all tuberculous animals of special breeding qualities, but free from physical symptoms of the disease, should be at once removed to the county farm, while those showing physical symptoms of the disease or that do not have valuable breeding qualities, could be sold for slaughter under the usual conditions, thereby at once removing all tuberculous cattle from the farm. After having removed the reacting animals, the stable, sheds, etc., should be thoroughly disinfected; and it might also be well to dip or spray the animals with an antiseptic, so as to destroy as nearly as practical, all of the germs about the healthy cattle and the premises.

After the herd and the premises have been freed from the tubercle bacilli, care should be exercised that no diseased animals are introduced into the healthy herd.

The reason for slaughtering the cattle that have no special breeding qualities and those presenting physical symptoms of the disease, is self-evident—such cattle would not pay for their keep.

It would be immaterial so far as the general plan is concerned whether the state does or does not give compensation for the stock that is slaughtered. But personally I believe that better results would be obtained if the stock was appraised as if healthy and the state was authorized to pay the owner the difference, if any, between what the animals brought at slaughter and a fixed per cent. of the appraised valuation. The state or county would feed and care for the stock placed upon the county farm, for which it would receive an equitable percentage of the increase, such as is customary in leasing healthy cattle, while the owner would receive the remainder. The division of the stock could be made at the end of each year. If it would pay the owner to

keep on breeding this diseased stock on his own farm, which in the meantime would more or less rapidly spread the disease to his healthy stock, it would seem that it would pay better to have it bred upon the county farm, where the most favorable conditions could be maintained, and the disease be kept from spreading to healthy animals. While it would probably cost some more per head to raise the stock under restricted conditions, as the state or the county would have to raise them, the fact that these herds would be managed under the latest and most approved methods, the net returns would no doubt balance, if not exceed, those of the average breeder.

It would be necessary under this method for the state or county to go to some expense to properly equip farms, but this need not be large as no expensive buildings would be needed. The principal item of expense would be the proper fencing of the farms so as to keep the calves and other stock from coming in contact with the diseased cattle, and the erection of needed shedding to protect the stock from inclement weather, and a plant for sterilizing the milk for feeding the calves.

Under proper management the farms should be self-sustaining even with tuberculous stock. But if they were not, it appears to me that this expense would be much less than that of any plan of slaughter and reimbursement that would be anywhere near adequate to meet the demands of the average breeder, or to meet the expense of official supervision under the Bang method.

Under any form of the Bang method, practically none of the diseased cattle ever recover sufficiently to be returned to healthy herds. So it would be understood that cattle once plaecd in the county herd, would remain there until removed by death or for slaughter.

The proceeds of all slaughtered animals would revert to the owners. Competent men should be employed to manage these farms under proper sanitary rules and regulations formulated by the state veterinarian and approved by the State Department

of Agriculture or the Governor. It should be one of the duties of the state veterinarian to see that the sanitary regulations were properly carried out and any manager failing or neglecting to follow such instructions should be immediately removed.

In advocating this plan I am aware that some will take exception to it on the ground that the tendency will be for some parties to make political capital out of it; that it will be too expensive; that competent men cannot be found to manage such herds; that good results cannot be obtained with such stock; that the right types of animals will not be mated, etc., etc. In reply to such criticism it can be stated, without fear of successful contradiction, that if nothing is done to control or eradicate this disease until the items of politics and expense are eliminated, tuberculosis will have full sway so long as any susceptible cattle are in existence. Or to put it in another way: tuberculosis is so widespread and so prevalent, it enters more or less intimately into so many different phases of our national business that it is impossible to make any general attempt to control or prevent its spreading without government aid, and when this is asked, the political pot begins to boil.

Regarding the interference it might cause with the plans and ideals of some breeders, it must be granted that it might temporarily check line breeding, but it should be remembered that if but a small per cent. of the herd were affected, while it might retard development, it would not destroy it. On the other hand if a majority of the herd were affected line breeding could be followed with the cattle in the county herd, at any rate the interference would not be so great as though all the affected cattle were slaughtered.

Among the advantages of such a plan over the slaughter or the Bang method, it may be stated that it would obviate all danger of diseased animals infecting healthy cattle, and this is the principal object of any method, and the one that can bring this about with the least possible expense is the best. It would practically preserve the full breeding value of all animals, ex-

cept in the case of some special line breeding as referred to above. It would afford a perfect segregation of the animals into herds of 150 to 200 head, that could be handled much more economically than could a diseased and a healthy herd on each farm where tuberculosis might be found, as is done under the Bang method. Nor would it necessitate the needless sacrifice of valuable breeding animals as is done where the slaughter method is followed. Furthermore, it would afford especially good opportunities to work out many yet unsettled problems relative to tuberculosis in particular, and sanitary science as applied to cattle and cattle raising in general.

I have thus given you the general outlines of my plan. I might go on citing points in its favor and burden you with details, but I think enough has been said to throw the question open for discussion. I may be too optimistic in this matter, but from my present knowledge of the disease and the general conditions pertaining to it, this plan appeals to me very forcibly. On the other hand I wish to state that if it impresses you as being impractical and visionary I hope that you will not hesitate to point out wherein it is weak and impractical, because if I am in error, the sooner the fact is demonstrated the better it will be for all concerned.

ADDRESSED TO HIS DOG.—My dog, you haf a schnap. You vas only a dog, and I vos a man, but I vish I vos you. You effry way haf the best of it. Ven you go mid the bed in you shust durn around dree times and lay down. Ven I go mid the bed in, I haf to lock oup de place and vind oup the clock, and put de cat out, and undress mineself; and my vife she vakes oup and scols me, den de baby cries und I half to walk him oup and down, den maybe ven I shut go to schleep, it's time I get oup again. Ven you get oup you stretch yourself, und den scratch yourself a couple of times and you vas oup. I haf to light the fire, and put on de kettle, scrap some mid my vife, already, and maybe I get some breakfast. You blay around all day, and haf plenty of fun. I haf to vork all the time and haf plenty of trouble. Ven you die, you is dead—but ven I die I haf to go to H— yet!

PROTECTIVE VACCINATION AGAINST BOVINE TUBERCULOSIS.

By Prof. H. Strelinger.

Translated by Dr. Wilfred Lellmann, Professor at New York University.

The general fight against the most widely disseminated of all infectious diseases, tuberculosis, makes it everybody's duty to use all ways and means at his disposal whereby the spread of this "disease of the people" can be prevented. In this fight we shall reach our end only if physicians and veterinarians work hand in hand, supplementing each other by utilizing in their practice all the experiences gathered in the course of years.

That only a mutual proceeding of both professions can bring about success, is evident from the fact that the bacilli of human and animal tuberculosis are congenious. Even if the single types of tubercle bacilli show differences in their cultural properties and virulence, the pathological changes caused by them in the human or animal organism are more or less the same. Furthermore, pearl disease bacilli have frequently been found in children as well as in diseased adults. This fact has gained importance through the determination of "atypic" tubercle bacilli forms,* since these atypic forms, as so-called transition-forms, gradually conform to the organism of the individual that harbors them, the foreign tubercle bacilli by and by adopting the properties and forms of those bacilli that usually occur in this particular organism. This, too, might serve as an explanation for the difference in the degree of virulence of different tubercle bacilli types.

As is known, an infection with tubercle bacilli can take place in different ways. Very frequently by the intestinal tract, hence the greatest danger of infection in infancy may be looked for in the feeding of infected milk. If relatively few cases of de-

*Tuberculosis, August, 1907: "Contribution to the Present Status of Tuberculosis Research." by Lydia Rabinowitsch.

cided tuberculosis occur in sucklings, while the number of cases increases in the course of growth, the theory is accepted more and more that the tubercle bacilli which have found their way into the organism of the suckling can remain there *latent* for a long time and that the presence of special conditions is required for the development of the disease.

The excellent writings of Pirquet concerning the so-called early diagnosis of tuberculosis will be of great help for the determination that tuberculosis infection in most cases can be traced back to infection in early infancy. The hypersusceptibility of the infected child-organism, ascertained by Pirquet, toward his vaccination method, will prove an existing tuberculosis infection also in *those* cases, where even at post-mortem examination a macroscopic, that is, clinically perceptible, tuberculosis could not yet be proven. In such cases, cultures and animal tests would surely explain the phenomena of the hypersusceptibility, and, simultaneously, the latency of the tubercle bacilli. Probably the granular tuberculosis virus discovered by Much, which cannot be colored according to Ziehl's method, may be of aid in solving this question.*

In connection with the above statements it affords me pleasure to make known the results of bovovaccinations performed by us since five and a half years. I hope that my strictly objective report will prove of some help in this important matter.

With us, bovovaccinations were commenced on September 15, 1902. After the Estate Administration had convinced themselves of the value of this method it was decided that protective vaccinations be introduced gradually on all estates. The bovovaccinations have been performed in strict adherence to the directions of Professor on Behring. The following rules were observed:

Usually only such two to three weeks' old calves were vaccinated which, after a veterinary examination, had been found in good health. Three months after the first vaccination the

* Brauer's Contributions to the Clinic of Tuberculosis, Vol. VIII., No. 1.

calves were vaccinated for the second time. Prior to each vaccination the calves were watched for one to two days and their temperature was taken. After vaccination the taking of temperature was continued usually eight to ten days. The weight of the animals was ascertained about every month. The vaccine used was supplied exclusively by the Behringwerk in Marburg. The instruments and utensils employed in vaccinating, prior to their use, were sterilied by boiling in a 2 per cent. solution of lysol, in a steriliing machine especially constructed for this purpose. During sterilization, the required amount of the vaccine in 1 per cent. sterile salt solution was converted into an emulsion of the greatest possible uniformity.* As is known, 1 immunizing unit (I. E.) is required for first, and 5 I. E. for the second vaccination. Usually, injection was made intravenously in the left jugular vein. Before inoculation the site of injection was washed with the 2 per cent. warm lysol solution at our disposal, and afterwards well rubbed with pure alcohol.

All the animals vaccinated in this manner were subjected, every year, to veterinary clinical examinations and tuberculin tests. But the tuberculin test was applied not before at least one year after the last vaccination.

The yearly tuberculin tests were invariably performed in the following manner:

1. The animals to be tuberculin-tested are kept in their usual stalls 1 to 2 days prior to vaccination and their temperature is taken three times daily. The temperatures and the result of the clinical examination are entered in the tuberculin test records.

2. The injection itself is usually performed evenings. Young animals, up to two years, receive a dose of 0.3 c.c.; from this age upward, 0.5 c.c. tuberculin is injected subcutaneously; 7 to 8 eight hours after the vaccination the taking of temperatures begins and is done six times, with intervals of three hours.

3. In estimating the results the highest temperature prior to injection is taken, due consideration being given to the fact

* Since some time the Behringwerk supplies the ready-for-use emulsion.

that the initial temperature of young and not fully developed animals usually is 39.5°C.

4. Until now we have divided the results of tuberculinization into four classes; for instance, an animal receives the classification: O=If the temperature remains about normal after vaccination. I=If it shows a rise of not more than 0.5° C. II=If the rise of temperature remains below 1.0° C and in young animals does not exceed 40° C. III=Every animal showing a temperature above 40°C.

Further, in judging the temperatures, that important experience was borne in mind, that only such rises of temperature are to be considered decided typical fever symptoms, in which the temperature rises slowly, and, after reaching its highest point, gradually returns to the normal.

With these principles in mind, we obtained the following results of tuberculinization, end of last and beginning of this year:

End of 1907 and beginning of 1908 a total of 686 animals were tuberculin tested; the oldest of these animals had been bovovaccinated already about 5½ years ago. With the youngest more than two years had elapsed since bovovaccination.

In all there reacted 66 animals, hence the average percentage of reacting animals was 9.6.

The animals, separated according to the time of bovovaccination, showed the following tuberculin test results:

I.—Of 59 animals, bovovaccinated 5½ years ago, there reacted 6, or 10%.

II.—Of 173 animals, bovovaccinated 4 years ago, there reacted 24, or 13.8%.

III.—Of 305 animals, bovovaccinated 3 years ago, there reacted 22, or 7.2%.

IV.—Of 149 animals, bovovaccinated 2 years ago, there reacted 14, or 9.4%.

From these dates it is evident that our oldest animals, bovovaccinated 5½ years ago—in spite of ample infection opportunities—proved their acquired immunity in an excellent man-

ner, which fact appears to us all the more important, since we know from experience *that prior to the introduction of bovovaccination, already the two-year old animals, raised artificially, showed* 50% *reactions,* and these infection conditions increase proportionally with the age of the animals.

In estimating the above result the very important fact must be taken into account that bovovaccinated animals may be transferred from one estate to the other, irrespective of the infection conditions and without the slightest sanitary precautions, which is of the greatest importance for agricultural practice.

In connection with the above results of our tuberculin tests, I shall in the following report several other valuable observations which we were enabled to make, thanks to the extraordinary generosity of the estate owner.

To avoid reiteration, I must here refer to the report published by me at the time of the International Veterinary Congress, which convened in Budapest in 1905, and shall repeat only the most important points.

I. A lot of bovovaccinated animals was slaughtered and dissected. Five animals, in which bovoaccination had not been performed at the same time, were perfectly healthy and free from tuberculosis. The sixth (107-516), which was from a strongly reacting dam, showed a strong reaction already at the first boovaccination. Six months after bovovaccination there occurred general swelling of the glands, and on slaughtering general subacute tuberculosis of the lymphatic glands was found. The greatly changed peribronchial glands proved to be the source and oldest tubercular lesions, and *these* changes in all probability can be traced back to the time *prior* to bovovaccination. It seems probable that in this case an already existing, latent tuberculosis has entered an acute stage through bovovaccination. This observation causes me to again call attention to the fact, that, according to the directions, if possible only very young and healthy animals should be subjected to bovovaccination.

II.—For purposes of control, two animal groups were placed into one of our most severely infected stables and kept there to-

gether with the old stock for nine months. After this time all bovovaccinated animals proved to be healthy, while of the non-vaccinated but also artificially raised calves there reacted 50% to tuberculin. As to the further fate of these two animal groups, I wish to state that at the recent tuberculin test all non-bovovaccinated animals, with the exception of one, reacted, while of the bovovaccinated animals one (375) showed reaction. This reacting animal was bovovaccinated September 15, 1902, and, as one of the first of our bovovaccinated animals, *received only one bovovaccination.*

III.—In connection with these observations, I shall report a recently made, similar experience. Because of their physical condition, five animals were not vaccinated, but 15 other animals from the same herd were subjected to the treatment. At the last tuberculin test it was found that every one of the five non-vaccinated animals reacted, while the fifteen bovovaccinated calves did not respond to the test.

IV.—For the sake of experiment, another animal group was infected intravenously, by means of a highly virulent pearl disease culture. Two of these animals were highly immunized; three had received the typical bovovaccination. The first two have now—five years after infection—proved absolutely healthy and non-responsive to tuberculin; two of the animals bovovaccinated in the usual manner, which were slaughtered one year after infection, proved to be highly tuberculous, and the third animal of this group was further observed. During the first and second year after infection it reacted positively to the tuberculin test. During the last three years it did not respond any longer. A clinical examination proved it to be sound and it has had several healthy calves.

V.—Twenty-one young cows were placed with one of our oldest and most severely infected herds, partly for reasons of convenience, partly in order to observe, how the bovovaccinated animals would be influenced by conditions strongly conducive to infection. In our recent tuberculin test two of these animals

showed a slight reaction, but a clinical examination proved them to be healthy.

VI.—On the estate R. Sömjen the calves were raised under natural conditions, remaining in the infected stables with the reacting dams, which also nursed the calves. The only protection which we accorded these calves was that they were bovovaccinated at as early an age as possible. The result of the tuberculin test in these animals was just as favorable as on the other estates where the animals had been raised artificially.

Considering these facts which prove the favorable influence of bovovaccination against the danger of tuberculosis infection and which manifest that the method of protective vaccination can be easily and successfully employed under the most ordinary agricultural conditions, it seems highly opportune to again and again direct the attention of our interested parties to Behring's protective vaccination.

Our experiences teach that bovovaccination imparts to cattle, for 5½ years, a decided resistance to infection since, as pointed out above, by means of bovovaccination the percentage of the 5½-year-old animals reacting to tuberculin has been reduced to about 10%, while prior to the adoption of the protective vaccination 50% of the artificially raised 2-year-old animals reacted to tuberculin.

If it is further taken into account that we obtained so favorable a result also in herds where the bovovaccinated animals remained together with highly tuberculous cows, it is evident that the protective vaccination may be employed under ordinary agricultural conditions with favorable results; and we are further warranted in the assumption that the resistance to tuberculosis infection imparted to the calves, since it has endured for over five years, will continue for a longer time.

Therefore, I consider the recently advocated yearly repetition of the protective vaccination absolutely superfluous. According to my opinion, *even one repetition of the vaccination should not be made by any means,* in order to exclude every possibility of an infection through the milk.

Instead of a repetition of the vaccination, I would recommend hygienic measures as far as agricultural conditions permit, and I shall in the following briefly mention the methods for suppressing tuberculosis, based on hygienic principles, viz., the methods of Bang and Ostertag.

By the Bang method, so-called clean cattle herds have indeed been obtained, but these remain free from tuberculosis only during the time the animals are kept from contact with tuberculous cattle. If breed animals from such clean herds are placed with other stock, they will soon succumb to tuberculosis. The great agricultural difficulty and the financial sacrifices connected with the Bang method may be the reason that the genial idea of Bang is taken hold of but slowly in practice, and that agriculturists manifest an increasing interest for the Ostertag method, because the latter is simpler and its requirements are more easily carried out.

Without entering into details, I would like to point out the most important principles of Ostertag's method, viz., by systematic clinical examinations, the actually tuberculous animals are to be eliminated, and the calves raised artificially. The above mentioned disadvantage of Bang's method, viz., the infection danger which threatens animals from clean herds after their removal to other herds, naturally is present also with Ostertag's method, and it will be of the greatest importance is cattle can be not only protected from tuberculosis infection, but if there can be imparted to them an active resistance. The latter is obtained by bovovaccination, and it is therefore desirable to use a combination of the Ostertag method and Behring's bovovaccination. I shall endeavor to enumerate the most important points of such a combination method:

I.—As main condition, I consider the careful bovovaccination performed exactly according to Behrings directions.

II.—The usual tuberculin test of the adult animals vaccinated according to von Behring may be dispensed with and need be resorted to only in special cases; but exact clinical examinations of the entire herd should be made in certain intervals.

III.—The tuberculin tests of the calves, according to Ostertag, can be omitted in the combination method, since the bovovaccine injections act as tuberculin tests. (I wish to state that I have frequently made the observation that calves showing a typical reaction upon bovovaccination later proved to be infected.)

IV.—With a combination of both methods the artificial raising of calves demanded by Ostertag can be dispensed with as well, since our experiences have proven that under ordinary conditions calves develop just as favorably as calves raised artificially if they have been bovovaccinated at an early age. It seems to me that this is an advantage of the combination method which should not be underestimated since in many cases an artificial raising of the calves is attended with difficulty.

In the above I have given the main requirements for the combined employment of both methods, and it merely remains now to point out as a further important task for the attainment of our end, to obtain cattle herds free from tuberculosis, to provide for stables answering all hygienic demands, and that the animals as far as agricultural and weather conditions will permit, are kept outdoors.

BREAKING HIS ATTACHMENT.—City Man—That's a fine bulldog. Does he ever become attached to strangers?

Farmer Brown—Occasionally he becomes attached to tramps, but we break the attachment with a chisel and a monkey-wrench. —(*Tit-Bits.*)

EXHIBITORS REPRESENTED BY VETERINARIAN.—The REVIEW notes with pleasure the fact that G. Howard Davison, D. V. S., Millbrook, N. Y., Secretary of the National Association of Exhibitors of Live Stock, has scored an important point in the interest of live stock exhibitors in obtaining a favorable decision from the managers of the New York State Fair to drop the ten per cent. entry fee on live stock which has been imposed for a number of years. This is a concession which will be much appreciated by exhibitors and will undoubtedly materially increase the number of exhibits at Syracuse in September.

PRESIDENT'S ADDRESS.

By Dr. Geo. H. Glover, Fort Collins, Colorado.

Delivered Before the Colorado State Veterinary Medical Association.

Once more we are privileged to assemble in these spacious parlors, through the courtesy of the Gentlemen's Riding and Driving Club.

This meeting marks the fourth mile post in the life history of this the first and only state association of qualified veterinarians of Colorado. May its journey, which was inspired in good will and confidence, be not interrupted by apathy or discord. On the contrary, let us now resolve to be magnanimous in spirit and gracious enough to at all times put down, and keep down, petty differences, and, with the glad hand all around, work for the honor and betterment of our chosen profession.

Man will never attain to his highest and best in this or any other field of human activity until he learns to appreciate and appropriate and ingraft into his very life the esssence of this fundamental principle of social ethics: "He serves his own interest best who works for the common good of all."

We have in this association a code of ethics, implied, not written. We are morally bound as qualified veterinarians and honorable men to be steadfast and loyal to each other.

I believe in the law of evolution and that it is universal, except in case of the one who cherishes a grudge or tenaciously holds a grievance. In such a one there is moral stagnation. His better nature is sure to become atrophied from innuendo and his soul tainted by the gangrene of conflicting emotions.

We cannot help but admire the man who in life's relentless struggle, having been staggered by a blow (even though it were below the belt), does not lie down because the game is not fair; but, on the contrary, comes up smiling and fights on to a more signal victory, because of contending with greater odds.

He who runs may read, in the stratified rocks of the ages, the story of man and his evolution on this earth for a million and a half years. The last decade marks a very small period indeed of this time, but nevertheless an epoch fraught with greater progress than any similar period in the history of the world. I feel sure that I shall not be accused of exaggeration when I say that our profession has taken greater strides forward during this time than any other, for the reason, I presume, that it has had farther to go. From the superstitious vender of quack nostrums to the ardent student of therapeutics; from the devotee of omens, charms, and the caprice of jealous gods, to faith in self and the inexorable laws of nature; from the uncouth tippler whose office was in the rear of Murphy's saloon, to the cultured, scholarly gentleman, an honored citizen of the community. Such has been the evolution of the veterinarian.

While we are inclined to look with complacent pride upon the "modern veterinarian" and are pleased to draw favorable comparison between him and the "hoss doctor" of old, still, we should be charitable, and many of us are in position where we must be, having graduated from the old two-year schools. But the end is not yet, for the possibilities in the realm of comparative medicine are beyond conjecture.

We have as yet scarcely taken a look into the great problems awaiting investigation which so vitally concern the animal wealth and the public health.

If we wish to enjoy a more liberal patronage, to extend our sphere of influence individually and collectively, we can do it; but there is a price, and the price is not only efficiency and absolute integrity, but it means that we must stand shoulder to shoulder and insist that every man lives up to a well understood standard of honesty, sobriety and professional efficiency. Our profession will never be honored and respected, neither will we as individuals, until we can get together, cut out petty jealousy and fearlessly ostracize anyone found guilty of unprofessional conduct. Certainly, we should not by our silence seemingly sanction such conduct.

I believe that Emerson's essay on compensation is the greatest thing ever written, and I believe that in the long run we each and all get just about what we deserve. Society will honor the profession and promote the individual that serves it best.

I am scolding a little, but I also have words of praise, and I believe just grounds for expressions of gratitude. In so doing, I am reminded of an erratic lady who lived neighbor to us one time. As certain as the sun would rise in the East, and invariably before it would have set in the West, this woman would lose her temper and lambaste her boy unmercifully, and as soon as he would begin to cry, she would become sorry, and the closing scene was always the same, viz., a sickening mixture of osculations, tears, and expressions of regret all round. Yes, society promotes those who serve it best, but destiny awaits around the corner with a stuffed club for the man who is a "quitter." Let us not neglect our duties to this association. Let us make a special effort to be present at every meeting, do our part and meet our financial obligations. I shall favor dropping those from the roll of membership who are in arrears for more than two years. It takes a little money to keeep this organization alive.

I appeal to you from the standpoint of business integrity, as long as you are members of this association, meet your obligations cheerfully. If you are dissatisfied with the management you have this day the opportunity to elect new officers. If you do not care to continue as members, you are nevertheless honor bound to square yourself on the books.

The educated veterinarian of character and ability is at last receiving the patronage and recognition which he so justly deserves. It is with a feeling of wholesome pride and real satisfaction that I remind you of the fact that several of our members have been invited to read scientific papers before medical associations. Others have been elected honorary members of such societies. One at least is a member of a City Council and all are making good.

It is time we were laying plans for future legislation. It is evident to all of us that our present law is inadequate. It is so grossly deficient that the State Board of Veterinary Examiners, after taking legal council, have not dared to risk a prosecution under it.

There are those of our members who favor a law granting certificates to practice as non-graduates, those who have been practicing within the state for ten years and who have heretofore been denied any recognition.

The effect of this law would be, in substance, to stamp such men as non-graduates, but not interfere with them; to make the law, in other respects, so stringent as to absolutely prohibit the influx of pretenders from other states, and prevent us from being in the future as we now are, the dumping ground for "quacks" from all over Christendom. Such a law could be passed without serious opposition, and while it would afford us no protection at present, conditions would be no worse than now, and it would provide a secure and safe adjustment of the perplexing problem in the future.

Here is another problem to which I wish to call your attention, and I most earnestly solicit your careful consideration. If deemed appropriate, I would like to see the adoption of suitable resolutions. It has been said that opportunity knocks once at every man's door in a lifetime. The time is propitious. Public sentiment is ripe. I refer to the mattter of an appropriate state law regulating the inspection and control of tuberculosis animals.

Already we have succeeded in getting pure food laws enacted in several of our larger cities. This work is praiseworthy. It is in the interest of humanity, for it is rightly looked at from the viewpoint of protecting the animal wealth as well as the public health.

I feel justified in sounding one word of warning; let us be careful not to injure the cause by charging exorbitant fees, by doing anything that savors of graft, or that will in any way

subject us to suspicion, of anything but the most honorable and honest motives.

The State Board of Agriculture has created a Veterinary College, as a Department in the State Agricultural College. As the head of that department, I am naturally solicitous as to its welfare. I assure you that I shall appreciate and at all times solicit your council and advice, and I trust that we may at all times merit your confidence and good will. I deplore the fact that most of you are so far away that your services are not available.

This school under the new regime was started auspiciously, and, generally speaking, is progressing satisfactorily. It is the only school of its kind between San Francisco and Manhattan, Kansas.

Notwithstanding the fact that the matriculation requirement of high school graduation is a step in advance of other veterinary schools in America (with two exceptions), yet we have enrolled thirty-four students, and could not without much inconvenience have accommodated more.

In one particular, this course of study is to be looked upon as entirely different from others. In the ordinary vocations of life a question is seldom asked as to a man's preparation for his work, whether within college walls or without; it simply remains for him to make good—he must deliver the message to Garcia. In the profession of medicine it is quite different, for here he is uncompromisingly judged by his co-workers, according to the reputation of the schoool from which he receives his degree.

The limited source of veterinary science in vogue at the Agricultural College three years ago was dropped none too soon. Several young men have completed the two-year course there, and, graduating in reputable veterinary colleges with honors one year later, found themselves in an awkward predicament in not being eligible to the civil service examinations or to the American Veterinary Medical Association.

The requirements for good standing in this connection, among other things, is a two-year bona fide attendance in a recognized veterinary college. We made no pretentions at that time of maintaining a regular veterinary school (not granting a degree), and while our graduates did us, as well as themselves, much credit by winning special honors, yet they were caught by a technicality and were without standing, having only spent one year in a recognized veterinary college.

This department has now launched out as a full-fledged veterinary college, and we shall need to look to our educational standing that we may compare favorably with older schools. I assure you that I fully appreciate the moral responsibility devolving upon us to see that such a standard is maintained, as will insure our graduates recognition everywhere. To rank among the list of accredited schools, we must have at least three qualified veterinarians on the faculty and a term of three years of six months each year. The curriculum must be satisfactory and the subjects therein named must be actually taught and with a degree of efficiency that will be beyond question. And lastly the equipment must be ample and a large clinic is indispensable.

We have now twenty on the faculty, six of whom are veterinarians, two physicians, and among the balance are such men as Carlyle, Gilette, Headden and Paddock, men of national reputation in their specialties.

Our hospital is full most of the time. The equipment is fair and will be made first class in every detail. Our college term is nine months, making twenty-seven in all instead of eighteen as required.

The number of students enrolled matters little to us, but it does concern us much that our graduates have had every advantage and, by their gentlemanly bearing and efficient service, will be a credit to their alma mater.

To raise the standard of veterinary medicine in this country it must be evident to all that the laying of a secure foundation by high school graduation is the first requisite; the next is a

cultural training along with a thorough knowledge of the art and science of veterinary medicine and surgery. In this way only can our professsion ever expect to aspire to the dignity and the respect of station in life to which its nobility and importance justly entitles it.

This college is yours as much as it is mine. You pay taxes for its support. I feel great need of your sympathy, your support and the benefit of your experience and wise council.

There are many things I should like to say to you, but I feel that I have already taken too much of your valuable time.

Let the motto of this meeting be good fellowship, with a firm resolve to be big enough to eliminate every unkind thought, and with our faces ever toward the rising sun, hopeful of a better day and a greater ability to improve our opportunities. I thank you for the confidence bestowed in electing me your president, and I bid you all Godspeed.

For the first time in the history of the Veterinary Department of the University of Pennsylvania the alumni baseball team beat the graduating class on Commencement Day, June 17, 1908. McNeil, Jones, Ridge, Felton, Formad, Harger, Mackie and Marshall were foremost among the professional rooters.

The government is extending its efforts at tick eradication on an extensive scale in the State of Oklahoma. This service is under the direct supervision of Dr. Leslie J. Allen, who has now in the field a large corps of veterinary and lay workers. The work is done on the co-operative plan between the state and the B. A. I., and the veterinarians on the force are made state as well as government officers for this purpose.

Unusual Cases.—Veterinarians Rogers and son, of Woodbury, N. J., report that during the past month they have had two cases of parturient apoplexy under conditions rather uncommon. Case No. 1 was in a cow having complete eversion of the uterus with parturient paresis. The other was a case where typical "milk fever" occurred before calving. Both patients died despite a strenuous oxygen and general treatment.

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

POISONING FROM LOCUST BARK.

By C. A. WALDRON, V. S, Tecumseh Mich.

Reported to the Michigan State Veterinary Medical Association.

Did you ever have a case or a number of them all similar and you did not know what was the cause until the animal was better or until he had gone where he could not feel the effects of your ignorant torture? Then, when you have come to a rational understanding with yourself, found out what the real trouble was, and it seemed to you that you ought to have known that in the first place, if you are at all honest with yourself, if not, with the world at large, don't you feel like saying, "That it is one on me?" Well, that was the way I felt when I got through with the cases that I am about to relate. Perhaps it would have been better had I waited and reported this under the head of diseases, but wishing to make a more lengthy report and desiring to help the secretary with his program, I take this opportunity to present this case to you:

Along about the middle of October I came home one evening about eight o'clock and found an order to call my brother by 'phone. I did so, and this was what he told me: It seemed that he had driven his fine work team, full sisters, four and five years old, weighing about 1,300 lbs. each, to the planing mill that day. They were blanketed and tied near the mill and allowed to stand for perhaps an hour and a half, after which they were driven to the mill and kept standing for an hour and a half longer until their load was ready. They were then driven directly home, where, as the weather was mild and they were not warm, they were put in the stable without blankets. This was about 3 P. M. Nothing wrong was noticed until about 7 o'clock, when it was noticed that they were not eating, that they were standing with heads down, extremities cold, respiration normal and pulse weak but normal in number. As he was unable to get me then, he blanketed them, bandaged their

legs and gave them ten drops of aconite per hour, as he was afraid of lung trouble. When I called he had just given the second dose of aconite. He said the extremities were warm and they were easy, but did not care to eat. I thought he was more scared than hurt, as he would be scared if they looked crossways, so I told him so and told him to call in the morning as I thought that they would look better to him in the morning and they certainly would to me. In the morning he said that they appeared better but still did not care to eat, and asked what I thought of giving a pill for he believed they were bilious, the mucous membrane being of such a yellowish brown color. He did so, but did not give them anything else. I 'phoned him again that evening, and he said that they appeared to be about the same, would take a little hay and a few swallows of water once in a while, and that they stood as if resting with head downward, ears drooping, lying down some but not more than natural. Their breathing was normal and pulse almost imperceptible. So we left them that night, thinking that as soon as the pill operated they would feel better.

About one o'clock that night my brother's wife came for me as they had not been able to get us by 'phone, and as she said that the heart of one of the horses was beating so hard that it shook the horse at every beat and could be heard outside of the barn, I thought that I had better get there as soon as I could. I did so, after first calling him and telling him to give it one-half pint of whiskey. These were the symptoms as I found them: The horse was in a state of extreme lassitude —if you will permit me to use the term—for the whole body seemed to be relaxed. This was not, however, as might seem to be the case, from the effects of the whiskey, for the other horse, which had received none, acted in exactly the same manner, excepting the spasmodic action of the diaphragm which they had thought was the beating of the heart. The pulse when found was very flabby and lay drawn out, so to speak. I don't remember ever feeling such a one before. It felt as if the heart were full to overflowing and could only force the blood out very slowly, the beat being twenty-five per minute. The temperature was normal, respiration 10 and was rather sonorous, which was caused, I think, by the relaxed condition of the nostrils. As soon as possible I gave her one-half dram each of fluid extract of digitalis and nux vomica, intervenous, and then went on with my examination. The bowels and kidneys had acted as

normal, the mucous membrane wherever examined was congested and presented a bluish, rustly, yellow appearance, if you can conceive of such a color. The lips inside of mouth were somewhat swollen as from the congestion of the capillaries. A slight clear ptyalism was noticeable at all times. The most marked symptoms was in the dilation of the pupil of the eye, which was as large as was possible for it to be. I thought my brother had given an excessive dose of belladonna, but he said he had given only what I had told him. By auscultation, I found the heart in a very weak condition, and it almost seemed that I could hear the blood run back through the valves, but in this I, of course, was mistaken.

We had a very perceptible so-called veinous pulse in the neck. The sound was caused by the action of the diaphragm. It was greatest when the ribs were at their fullest expansion and could be heard most distinctly at a distance of ten feet. I tried to locate or rather find out what produced the sound, but in that I am as ignorant now as I was then. The convulsions were about twenty per minute. The other mare's symptoms were almost identical except she was not so weak, and there was no irregularity of the diaphragm. It was nearly three weeks before they were themselves again. From the appearance of the eye and the membrane of the mouth, we were led to believe they had gotten some poison. In questioning about where the team was hitched at the mill it was found he had tied them to a young locust tree which had come up by the stump where a locust tree had been cut down a few years before. This was a sapling of about four inches in diameter and had probably made a very rapid growth and the bark, from that reason, was tender and easily peeled. They had done a very good job of peeling, but as they had their bits in they were not able to swallow much. The poison obtained from this bark is, in my opinion, the cause of the trouble.

The second, or, rather, third case, which appeared about ten days after, was a seventeen-year-old brood mare whose colt was weaned from her two months previous. One morning she was found in the stables suffering to all appearance from a case of lymphangitis. The man that owned her telephoned me if he should give her a pill and apply the same wash that I had left for another case that I had treated for him a few weeks previous. He did so, and I heard nothing from her until the next day, about noon, I got a message to come as soon as I could, which I did. I found the mare down but able to rise, but not

willing to stand very long; she was very lame in the leg that was swollen the day before, but the swelling was all gone and no soreness in any part of the leg from manipulation; the other symptoms were almost identical with those of my brother's horses, bowels moving freely but not watery, nor were they at any time. I gave this mare digitalis and nux vomica in connection with muriate of ammonia.

The next morning I did not see her, but as she was no better I had them give her six ounces of whiskey and thirty grains of quinine every three hours alternately with the other medicine. She died about 6 P. M., and they said that her heart pounded so that it shook her all over and they could hear it outside of the barn with the door shut. I was not at the post-mortem, but the mucous membrane throughout all the whole alimentary canal had the same appearance as that of the mucous membrane of the mouth, and no inflammation was discovered except a small patch of the blind gut, as the man that opened her, expressed it.

This mare had trimmed up a young growth of locust trees that were set the spring before. It is needless to say that this man has no more locust groves, and neither has a great many more in that section.

Now, I am willing to say that I did not know that locust bark was poison and that I did not know what the trouble was with these horses, nor what to do, so I consider it as one on me, and since that time I have searched high and low for something on this subject and all that I find is what is in the U. S. Pharmacopœia, which, says Z. T. Emery, in the N.Y.N.J., January 22, 1887, he reports the poisoning of thirty-three boys from chewing the bark of the locust. In the mild cases he reports flushed faces, dryness of the throat and mouth, and dilation of the pupils. In severe cases was added epigastric pain, extremely feeble intermittent heart beats and stupor.

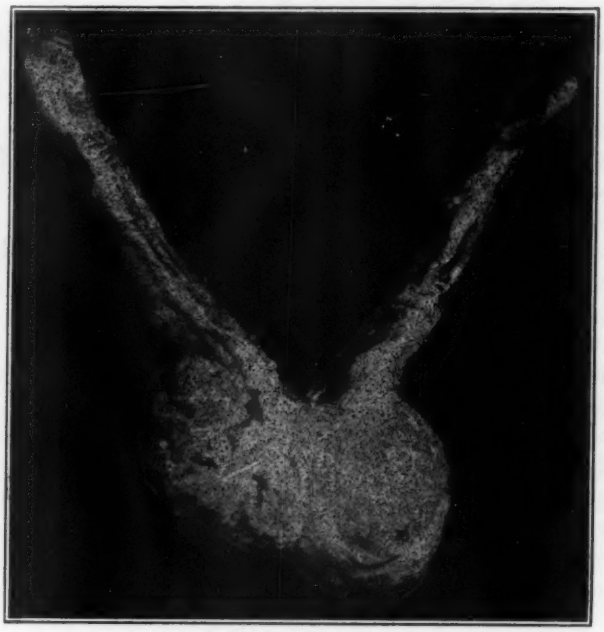
For my future uses I have deducted the following symptoms: Extreme lassitude, which includes almost imperceptible pulse and which, when found, is weak and prolonged; respiration less than normal by one-third and sonorous; temperature normal, no pain, no appetite, mucous membrane congested, of a blue, rusty, yellow color. Mucous membrane of the mouth, some swollen, caused by the congestion of the capillaries; slight ptyalism, and above all, the dilation of the pupil of the eye; in fact, I should judge, we have nearly the same symptoms we get in belladonna poison.

INTESTINAL DIVERTICULA.

A. T. KINSLEY, M. Sc., D. V. S., Pathologist, Kansas City Veterinary College.

The accompanying cut illustrates a diverticulum of the ileum of a two-year-old heifer. The specimen was obtained and presented to the museum of the Kansas City Veterinary College by Dr. C. I. Walch, Inspector, B. A. I., Kansas City, Missouri.

The specimen contained two diverticula about three meters apart. The one shown in the cut was about two meters anterior



From photograph showing intestinal diverticulum.

to the ileocecal valve and the second diverticulum anterior to it. They occurred on the side of the intestine opposite to the mesenteric insertion; one was 8 cm. and the other 10 cm. in length, and the capacity of either of them was about 400 cc. Their microscopic appearance and microscopic structure was the same as normal intestine of the same location, with the exception that the walls of the sacculations were not quite as thick as the normal intestinal wall and the muscular layers were partially substituted by fibrous tissue.

These diverticula are not the so-called "Meckels Diverticula," which are the remains of the emphalo-mesenteric duct. Meckels diverticulum is usually single and occurs within a meter of the ileocecal valve, and the attenuated walls and fibrous substitution in these are indicative of post natal formation.

Post natal diverticula result from constipation, calculi, weakening of the intestinal wall by disease, parasitic invasion, etc.

Intestinal diverticula are of considerable moment, whether they are of ante-natal or post-natal origin. Those occurring in the small intestine do not cause as much disturbance as those occurring in the large intestine because the content of the small intestine is of a liquid consistency and that of the large intestine is solid or semi-solid. Diverticula are of more consequence if the sacculation is on the inferior portion of the intestine, *i. e.*, on the side opposite to the mesentery, for this favors deposition and accumulation of the solid contents of the intestine in them. Diverticula have a small opening through which they communicate with the intestine and are more likely to result in a fatal termination than dilitations in which the entire intestine is dilated.

Intestinal diverticula may become harmful in various ways. Thus foreign bodies, nails, pieces of glass, etc., accumulate in them and may produce perforation and fatal peritonitis. Gravel and sand may collect in sufficient quantities in them to result in more extensive sacculation or establish inflammation. They may be a factor in the production of volvuli. Accumulated ingesta may undergo putrefaction and autointoxication result from absorption of the putrefactive products. Intestinal parasites find in them a favorable field for their activity.

NOTES ON THE BIER HYPERÆMIC TREATMENT.

By A. W. WHITEHOUSE, V. S. Laramie, Wyoming.

Case 1.—Nail Prick. Black mare drove a 30-penny nail backwards and upwards from near point of frog for about three inches. She had to pull a load for about 10 miles after the accident. When seen there was considerable swelling up to middle of metacarpus. In conjunction with the regular treatment, I tried a three-inch nine-foot rubber bandage just below knee

drawn moderately tight, to be kept on from one-half to one hour three or four times daily. This caused such severe pain that the attempt had to be abandoned. The mare made a slow but good recovery by the ordinary treatment.

Case 2.—Infected Hock. This is an unsatisfactory case, and by no means a fair test of the treatment. A brown mare had been mixed up with a plough and sustained extensive contusions and abrasions on the metatarsus, but no wound penetrating the skin. She had been given a purgative and no other treatment, the whole hind leg swelling enormously. When I was called in the swelling was confined to the hock, which was very hot and tender. The owner was by no means enthusiastic about her, and though I know the bandage was applied several times I doubt if any part of the treatment was faithfully attended to. The mare went from bad to worse and was finally destroyed, post-mortem revealing a typical open joint, though the capsular ligament had not ruptured till the day before she was destroyed. However, such treatment as she got did not appear of any benefit whatever.

Case 3.—Navicular Disease. A dun roadster gelding, seven years old, was purchased in Denver last September and began to dot a little as soon as brought home, being worse on hard ground. I saw this horse in December, took him and used him myself for a week, and quite satisfied myself of the correctness of the diagnosis. He nearly always pointed when standing; the lameness almost disappeared when put to his speed, which was considerable. The heel was really half an inch narrower than its mate; there were no corns, and the leg was very clean. I did not consider a cocaine diagnosis necessary. About January 1, I put him on the Bier treatment. Night and morning the 3-inch 9-foot rubber bandage was applied from below the knee to above the fetlock and drawn fairly tight, reduced to about two-thirds of its breadth, being left on for three-quarters of an hour. On very cold days the treatment was not used for fear of freezing. By February 1 he had ceased to point the foot. In March the bandage was only applied once a day. He is now perfectly sound for ordinary town roadwork, but has not had, and by my advice will not have a really hard trip for another month. The heel is somewhat expanded, and I believe that this is a recovery. I have just begun on another case and will report later. I may add that in two cases of infection of fingers in myself I have used the rubber band and had very nice and rapid recoveries.

ANEURISM AND THROMBUS WITH RUPTURE OF THE LEFT INTERNAL ILIAC ARTERY IN A ZEBRA.

By W. Reid Blair, D. V. S., Veterinarian and Pathologist, New York Zoological Park.

During the meeting of the New York State Veterinary Medical Society, held in the New York Zoological Park on September 25, 1907, many of the members present will doubtless recall seeing a zebra mare which had been suffering from an obscure affection of several months' standing.

For the previous four years this zebra mare delivered each year, without assistance, a fully matured foal. On March 27 she delivered a dead foal, which apparently had been carried the full gestation period. Soon afterward she began gradually to fail in health without presenting any acute or marked symptoms of disease. Notwithstanding a remarkably good appetite, she gradually declined, exhibiting emaciation and weakness. Atrophy was most prominent in the hind limbs. During the summer she was transferred to and allowed to range in a pasture of several acres where, besides grazing, she was fed daily with grain and hay. No improvement was noted in her condition, but it was noticed that, especially after slight exertion, there was a trembling of the hind limbs. This, however, would disappear after resting a little while.

After showing intermittent attacks of lameness in the hind limbs for several weeks, she was found dead in the pasture on October 10.

On post mortem examination the pelvic and abdominal cavities were found to contain a great amount of blood. The muscular and connective of the left leg was deeply infiltrated with blood, and the hemorrhage was traced to the internal iliac artery, which was found to contain a very large attached thrombus near its aortic bifurcation. The artery at this point was greatly dilated, exhibiting a large saculated aneurism.

The blood vessel was markedly degenerated, and the thrombus filled the entire lumen of the vessel. The thrombus was stratified, and pale in color; the rupture of the artery

irregular and ragged in appearance. Besides the condition already noted, the uterus showed a chronic inflammation apparently of some months' standing.

The aneurism was not of parasitic origin. Sections of the various arteries showed extensive fibroid changes.

"REVIEW up to date and scientific."—[*Frank Hockman, D. V. S., M. D., Louisville, Ill.*]

The LIVE STOCK JOURNAL, Chicago, in its issue of June 18th, gives space in its pages to the REVIEW editorial on "The Status of Veterinary Education," which appeared in our June number.

QUITE HOPELESS.—Mistress—Jane, I saw the milkman kiss you this morning. In the future I will take the milk in.

Jane—'Twouldn't be no use, mum. He's promised never to kiss anybody but me.—(*Illustrated Bits.*)

FINDING A HORSESHOE.—There is a man who has a very poor idea of the horseshoe as a bringer of good luck.

"I found one in the road some time ago," he remarked. "As a matter of fact, another old gentleman found it also about the same time. We both wanted it, and there was a tussle for it.

"I got the shoe, a black eye, a torn finger from a rusty nail in the shoe and a summons for assault and battery.

"It wasn't a very good start, but I thought I'd give it a fair trial. Of course in nailing the shoe up above the front door I managed to smash my thumb and fall from the stepladder.

"Then I sat down and waited for the luck to begin. That shoe seemed to be endowed with the power to attract trouble in every form.

"Duns, bailiffs, the landlord, measles and poverty were rarely out of the house, and my faith was shaken.

"Then one day, when the rate collector was standing on the top step, that shoe came down with a crash"——

"Ah!" interrupted the sympathizer. "Luck at last!"

"Not a bit of it," sighed the unlucky one. "It missed him by a foot."—(*London Answers.*)

ARMY VETERINARY DEPARTMENT.

STATUS OF THE ARMY VETERINARY BILL.

The bill "To increase the efficiency of the veterinary service of the army" is one of the numerous military measures which have not been finally acted upon by the first session of the present Congress and which will come before the second session which meets on December 7, 1908.

It will be well to remark at this time that this bill is getting old. It was on December 15, 1904, when the army veterinarians, having agreed on a draft for a bill, forwarded the same together with explanatory remarks through military channels, praying for legislation. After some delay the general staff of the army took up our document for consideration, and drafted an entirely new bill which materially changed our recommendations, eliminated the "grade" (rank) for which we had asked, and added some rather ironclad requirements for promotion to a "better-paid" position after ten years of service. This official bill was then transmitted by the Secretary of War to both houses of Congress on January 20, 1906, and introduced by Senator Warren and Representative Hull early in February, 1906.

The bill has twice been favorably acted upon by the Senate but never by the House. According to the *Army and Navy Register* of June 6, 1908, its status is now as follows:

Senate 654. To increase the efficiency of the Veterinary Service of the Army. Senate, February 22-29. Present status: House Military Committee.

House: 11790. To increase, etc. Text, January 11-21. House Military Committee.

There are forty military bills ahead of ours according to the published list, among them two or three that are commonly regarded as important bills, a category to which unfortunately our little bill does not belong.

The question before us is this: Shall we let the official bill, as passed by the Senate, go through the House at the second session, or shall we use the occasion of its consideration before the House Military Committee to introduce the changes that are clamored for by a majority of the army veterinarians. As previously mentioned in these pages, there has been a growing dis-

content with some of the features of the official bill, made stronger by its delay and repeated failures to pass, and there are a few extremists among us who would now outright kill it. Whether such steps would be wise, I for one seriously doubt, and while there is nobody enthusiastic over this bill, the conservatives among us want to let it go on. I personally have repeatedly spoken in its favor in order to offset and discourage any attempt to suppress it. The ground I take is this: We must not forget that a great deal of labor and effort has been applied to get this bill where it is; that it was the first veterinary bill ever officially considered and directly worked out by the War Department, showing appreciation of its necessity and good will in more than one respect; that it was and still is fostered by the representatives of the army in Congress, and finally that it is half passed.

All this would be more or less lost should we propose to the War Department an entirely new measure made up to suit ourselves in the way of rank and veterinary organization, fashioned after this or that foreign army. We all of us hope to see the day when such can be accomplished, but this day is not yet dawning. We constantly read and hear from our army colleagues reports to the effect that certain officers from a major-general down to the youngest lieutenant is in favor of giving us rank and a respectable veterinary corps. This is all very nice and true; there always have been and are now a limitd number of officers who think that way, *but the majority do not*, and the fact remains that when these officers assume responsible places and are closeted together they vote against such propositions. No, aside from polite admission of our worth and frank acknowledgment of our usefulness in the army, we are not yet wanted in a position of authority from reasons that it would be impolite to explain.

As we stand, then, we could gain nothing by reaching out for something that is not attainable at this stage of our progress. Progress, however, we are making constantly, and we might try and should try to have corrected the clause in the official bill that would throw out of service those of us that were physically disabled in line of duty; we should try to get a first lieutenant's pay and allowances after *five* years of service as originally requested by us, and a captain's pay and allowances after ten years of service; or, what is still more desirable and perhaps more readily attainable, a first lieutenant's pay on entrance into

the army service, and a captain's pay and allowances after ten years of service. There is a precedent for this request in the pay of entering surgeons and chaplains, whose expenses of professional education are seldom greater than ours have been, if in many cases they have been as high. It is this point more than any other that I would wish our younger army colleagues to consider with a view to their future in the army career. It is a just and wise claim, and would confer on us more prestige than a limited rank. Yet we may also try to have the "grade" inserted as petitioned in our original bill, which will simplify the entire bill.

Finally, the army veterinary bill is not only getting old in years, but it is in danger of becoming post date in the light of recent progressive army legislation enacted or sure to come. Some provision for the establishment of a Remount Department has been enacted and more in this direction is to follow. The veterinary service of an army should be closely united with the remount division, yet no provision has been made in this direction, either in our veterinary bill or in the pending remount bill. The proposed employment of civilian veterinarians for the remount service must be discouraged, for it takes years of observation, natural aptitude and special study and hard, practical experience in garrison duty, manœuvres and actual war to know what requirements in health, conformation and disposition we must exact of remount horses for the cavalry and artillery. Purchasing officers, while enthusiastic horsemen, are often deficient in this knowledge and experience and they sorely need the advice of an experienced army veterinarian, thoroughly competent in this special branch of our professional work, yet they are often given civilian veterinarians as "assistants" who are strictly confined to a more formal examination for soundness. Here is an opportunity to wipe out one of our worst army practices from which we seem unable to get away, and which results in the great number of unfit and unserviceable horses that always have been and still are being forced upon us in the mounted service. It is our plain duty to enlighten our military authorities on this ill-understood army veterinary branch, certainly not from pretence or professional usurpation as some others want to see it, but from a clear understanding of our duty toward an ill-advised government that is entitled to our best services along a line long since practiced in the older armies more schooled in dire experience of war.

We earnestly ask our army veterinarians and all in civil life who take an interest in our development in the army, to think this over and then get to work. Our Fort Riley veterinarians will undoubtedly be willing to hear from all by letter, so that we may be prepared in time to properly put forth our just and right claims at the second session of this Congress.

OLOF SCHWARZKOPF.

WHAT WEIGHT SHOULD A HORSE CARRY?

We are often inclined to pity a small pony carrying a heavy man on his back, apparently quite disproportioned to the powers of the animal. But it is not always the biggest horse that has the most carrying and staying power. During the Egyptian War, Colonel Drury Lowe, in his march to seize Cairo, was obliged to discard the big British troop horses and mount his big men on the small Arab ponies, which proved quite equal to the work. Amongst human beings a great, tall, gaunt man will often succumb under a load which a little nuggety-built man will make light of. So it is with horses. A thick-set pony, with a bit of breeding, will carry weight and wear down a brute twice his weight that lacks quality; and a high-bred weed will, even when poor, often work to death a horse of substance. Nevertheless, other things being equal, size, of course, indicates strength, and, having this in view, an English Army Veterinary Surgeon, Major-General Smith, some time ago made exhaustive inquiries into the question, "What weight should a horse be asked to carry?" The method adopted was to ask an independent observer to estimate the horse's carrying capacity, test that in practice, and then weigh the horse; in this way the proportion which the estimated weight-carrying capacity bore to the body-weight was ascertained. Veterinary Surgeon Major-General Smith's system was applied to two groups of horses belonging to light and heavy cavalry, and the result was, as we might expect, broadly speaking, the heavier the horse the more it could carry. The bridge on which the horses were weighed was not sensitive within 28 lbs. It was found that 13 horses whose carrying capacity had been estimated at an average of 170 lbs. weighed each 952 lbs.; that 10 whose carrying capacity had been put at an average of 175 lbs. weighed each 980 lbs.; that 10 whose carrying power had been put at 178 lbs. (average) weighed each 1,036 lbs. Further calculations and allowances were made to determine the relationship of a body-weight to carrying power, in a military

sense—*i. e.*, performing hard and continuous work—and it was found that, roughly speaking, 5¾ lbs. of body-weight were required to carry 1 lb. on the back during severe exertion.—(*Queensland Agricultural Journal.*)

IS MALLEIN AS RELIABLE A TEST FOR GLANDERS IN THE PHILIPPINES AS IT IS IN THE STATES?

CAMP STOTSENBURG, PAMP, P. I., May 25, 1908.

Having had ten years' experience with mallein as a diagnostic agent for glanders, in various parts of the United States, with few, if any, unsatisfactory results, naturally, mallein stood very high in my estimation.

I arrived at Camp Stotsenburg, P. I., with the 1st Cavalry Jan. 3, 1908, and soon had occasion to test, with mallein, all the horses of the 1st Cavalry and about 90 animals of the quartermaster's department, making in all about 900 horses and mules.

Following I am giving the record of 15 troop horses tested during the last of January, 1908:

No. of Animals	Average temperature before injection	Temperatures the Day After Injection			
		6 A. M.	8 A. M.	12 M.	4 P. M.
30	99	104.2	104.2	105.2	104.2
19	99.1	103	103	102.1	102
10	99	104.1	104	104.2	104.3
32	98.3	102.3	102.4	102	102
49	99	100.4	102.1	102.4	103
54	98.4	99.4	102.3	104	102.4
48	99.4	102.1	103	103	102
33	100	104	104	103.1	102
60	99.3	104	104.1	103.1	102
51	99.2	103.2	103.2	103	102
31	100	103.2	104	104	103.2
26	99	105	105.2	104.4	103.3
21	100.2	104	104	104.3	105.2
16	99 4	103 2	104	104.2	104.2
24	100	105	104.2	103.3	103.3

In getting the normal temperature before injecting, one temperature was taken from 3 to 5 o'clock p. m., the day before, and two on the day of injection at 7 to 11 o'clock a. m. Injections were made at 6 p. m. A few of these animals had local swellings, varying from 10 to 15 centimeters across and 2 in depth. The mallein used was furnished by the Bureau of Science, Manila, prepared at different times and kept in a refrigerator until used; 1 cc. was injected in each case. In no case was the mallein over six days old.

The above animals were retested thirty-five days after first injection with 2 cc. of mallein, with no reactions, except No. 10, which reacted about the same as at first.

These animals were in the best of condition during quarantine and no suspicious symptoms occurred, excepting the temperatures recorded and a few local swellings, which, out of about 900 animals tested, none resulted in an abscess, all subsiding in forty-eight hours. These animals have all been doing duty for two months since last injection and are in the best of condition, even No. 10. Not one of these animals have any inclination or enlargement of the submaxillary lymph glands.

Would the most zealous advocate of mallein as a curative agent claim that these horses were infected with glanders, and cured by the mallein? I think not. Or, will some claim that they are glanderous?

WALTER R. PICK,
Veterinarian 1st Cavalry.

* * *

PERSONAL ARMY NOTES.

By order of the Secretary of War, obtained through the Commissary General of the Army, Dr. D. Arthur Hughes, Inspector, Subsistence Department, U. S. Army, is to be sent to Washington in September, at the expense of the War Department, as official representative of the Subsistence Department at the International Congress on Tuberculosis more especially in Section VII., devoted to tuberculosis in animals and its relations to man.

Dr. Gerald Griffin, veterinarian 3rd Field Artillery, at present supervising veterinarian of the Quartermaster's Department in Havana, Cuba, has been detailed by the War Department to

represent the army at the coming annual meeting of the American Veterinary Medical Association at Philadelphia, Pa. Dr. Griffin is an old and tried army veterinarian and has inherited the gift of his Celtic race to say the right thing at the right time in language humorous or caustic, as the occasion may require. He will be an interesting visitor at the meeting.

Dr. Lusk, 2nd Cavalry, Fort Des Moines, Iowa, will enjoy a two months vacation, beginning with July 15, 1908.

NOT ENTIRELY.—Moe Rose—Do you think the automobile is replacing the horse? Joe Cose—Well, not entirely, anyway. I haven't found automobile in my bologna as yet.—(*Browning's Magazine.*)

ENCLOSED please find draft for $3.00 for the REVIEW for coming year. Would not be without monthly visitor for I find it is a great help to me in my work.—(*Arthur L. Wood, D. V. M., Assistant State Veterinarian, Hampton, Ia.*)

VETERINARY EDUCATION IN EUROPE.—There appears to be a decided awakening in Great Britain and European countries as to the importance of veterinary science. There is, Professor Berry says, an important movement everywhere visible for raising the standard of veterinary education. In illustration of this he mentions that the Imperial Government has granted to the Dublin College £30,000, which is to be supplemented by an additional grant of £15,000. The Dick College at Edinburgh has been taken over by the Edinburgh Council and is being heavily financed from the public rates, and has received private bequests amounting to £15,000; the University of Liverpool has taken over an institute previously in Edinburgh, and is being largely assisted by municipal rates; and in London not less than £6,000 per annum is being spent on the veterinary college. That the standard of veterinary education is being considerably raised is shown, he says, by the significant fact that two such differently constituted universities as Edinburgh and Liverpool are about to establish university degrees in veterinary science. Professor Berry says our aim in the colonies should be not the reproduction of veterinary science of twenty years ago, but we should rather aim at what veterinary science was about to become in Great Britain.—(*The North-West Farmer-Transvaal Journal.*)

ABSTRACTS FROM EXCHANGES.

ENGLISH REVIEW.

By Prof. A. Liautard, M. D., V. M.

Mesenteric Abscess Due to Streptococcic Infection [*C. H. H. Jolliffe, Veterinary Captain*].—Record of a case similar to the one alluded to in our English Review of May last, which occurred in a black gelding, which was ill since February 3, 1908, until March 12, when he died, after having presented a series of symptoms indicating abdominal troubles, the true nature of which could not positively be established. A range of temperature varying from 99.8° to 104.4° F. while the entire duration of the disease; rising invariably with two exceptions only in the evening; a condition which is recognized in connection with any pyogenous process, was observed during the whole sickness. The pulse and respiration giving no indications. The abdominal pains were of no special characters, except until immediately at the time of death, no evidence of severe pain, either continuous or in paroxysms were observed. The mucous membranes remaining normal all throughout the disaese. There were no rigors, nor sitting position resorted to by the animal. Toward the end of the disease rectal examination revealed a mass of some kind, which was supposed to be impacted ingesta or a calculus. But the whole was not sufficiently distinct to make the abscess, that it was, clearly discernible. Of course all the various treatments resorted to were of no avail. At the autopsy general acute peritonitis was found to be the immediate cause of death. The abdominal cavity contained large purulent effusion. There were spots of adhesion on the intestines. The mesenteric glands and the mesenteries bore evidences of widespread suppuration. There was an amorphous mass weighing approximately thirty pounds formed by a series of abscesses with thick walls and containing pus and necrotic tissues. There was an inguinal abscess. The microscopic examination of the pus proved the trouble to have been the result of streptococcic infection.—(*Veterinary Journal.*)

TRAUMATIC ABSCESS OF THE PAROTID GLAND [*G. M. Walrod*].—Pug has eaten nothing for four days and is all the time trying to swallow something. Nothing is found in his throat and yet this is sore on pressure. Perhaps he had swallowed a sharp bone some days before. He is placed on observation and a few days later has a swelling at the inferior part of the parotid region. It is an abscess, which is lanced and from which is extracted a common sewing needle with thread attached to it. Recovery was prompt.—(*Veterinary Journal.*)

AZOTURIA IN AN OLD HORSE [*C. W. J. Haworth*].—Bay gelding, twenty-seven years of age, takes azoturia. The attack is mild, and after three days the horse is apparently as well as ever with a treatment of Bicarbonate of Soda, Salol, Cannabis Indica and Nitrous Ether. After working one month longer he was found lying down, paralyzed, unable to rise, and being considered incurable, was killed.—(*Veterinary Journal.*)

PSEUDO-LUXATION OF THE PATELLA IN THE HORSE AND TRUE LUXATION IN A DOG [*C. H. Case*].—These are the records of: One case of pseudo dislocation occurring in a horse a number of times, relieved and finally cured with the treatment preconized by Prof. Williams, the whip. And also that of a true luxation in a dog in which the same result was obtained by reduction of the patella and repeated applications of tincture of iodine. The author makes the following comparison between the two cases:

1. The dislocation in the dog always occurred during violent exercise, while in the horse the so-called dislocation always occurred while the animal was standing.

2. The true dislocation in the dog caused unmistakable evidence of pain as soon as the accident occurred, whereas in the horse, so long as the patient was allowed to stand still no evidence of pain was apparent.

3. The dislocation in the dog was evident to vision and to palpation; in the horse no displacement was recognizable.

4. In the true dislocation of dog the limb is carried forward beneath the body, in the horse it is extended backward when the animal as forced to move.

5. Sudden forced movements of the horse overcame the difficulty; sudden forced movements of the dog induced it.—(*Veterinary Journal.*)

EFFECTS OF LIGHTNING STROKE [*A. P. Burgon, M. R. C. V. S.*].—A fold of fifty sheep was struck by lightning and all but one killed instantaneously. The one that escaped managed to walk about seventy yards, then fell down and succumbed. When seen the next day, the carcases were markedly tympanitic, and most of them were discharging from the nose a frothy mucus, sometimes tinged with blood. The wool was torn off the skin in various places and then there were black spots. Post mortem made on one, which seemed to be the most affected; no lesions could be found under the parts of the skin which were badly singed, the blood was not coagulated and the muscles not rigid.—(*Veterinary Record.*)

INTRACHEAL INJECTIONS OF IODINE FOR JOINT-ILL IN FOALS [*W. Lotham, M. R. C. V. S.*].—The author has obtained many good results with this treatment applied in foals, even when the condition of the animal was very bad. He used a solution of 2½ grains of Iodine with 5 of Pot. Iodide to the ounce of water, and injected 3 drachms of that solution in the trachea; repeating the operation every day for two or three days and following every other day. After the injection the animal is kept with the head slightly elevated for ten minutes, to prevent any of the solution being coughed up into the larynx. Usually five or six doses are required.—(*Veterinary Record.*)

RUPTURED STOMACH DUE TO TUMORS FORMED BY SPIROPTERA MEGASTOMA [*W. Lotham, M. R. C. V. S.*].—The subject was a bay mare, which first showed colicky pains, pawing, looking at her flanks, constantly lying down, getting into a sitting posture followed by a period of ease. This condition lasted for a week about, and then she was taken only after every meal. She received a dose of linseed oil and for ten days seemed to be without pain. They then return more violent, and although they are somewhat relieved by morphine, they did not entirely go away. She became tympanitic and passed no dung. Tapped and passage of the probang gave no relief. The symptoms then became very alarming, hurried pulse, quick breathing, cold sweat, haggard expression, throwing of frothy, yellow custard-colored material from the nostrils, all those indicated of an early fatal termination. It happened in a few minutes. At the post mortem, the peritoneal cavity was found containing dirty fluid and injesta, there was a rupture of the stomach with a six-inch rent. Two tumors were found in the stomach. One near the pyloric orifice

as big as an orange and the other in the cardiac region as large as a hen's egg. Each had five or six small perforations in the summit, around which numbers of Spiroptera megastoma were seen moving. On incising the tumors yellow pus escaped, and this was found swarming with worms.

The history of the case clearly points to the fact that the repeated attacks of colic after each meal were due to the obstruction to the passage of food in the pyloric region.—(*Veterinary Record.*)

THE OCCURRENCE OF THE SPIROPTERA MEGASTOMA AND S. MICROSTOMA IN THE STOMACH OF HORSES [*E. E. Martin, Major, A. V. C.*].—After a few remarks on the life-history of these parasites, the author relates the results he has obtained with four animals, abandoned because of unfitness for work, and which he submitted to different treatment. He destroyed one to satisfy himself that he was suffering with worms, and at the post mortem he found the S. Microstoma in very large quantities. To the second pony he gave an ounce and half of Oil of turpentine in a pint of Linseed oil. Although three doses of this mixture was given, at the post mortem the Microstomas were found in quantities apparently unaffected by the treatment given. To the third horse a powder made of 4 drachms of Areca nut, 2 of Sulphate of iron, 20 grains of Arsenic and 40 grains of Santonin was given twice a day for three days. The autopsy showed the S. Microstoma in quantities and very lively. Finally, to the fourth horse six doses of Sulphate of copper of 4 drachms each were given, the morning dose being dissolved in water and the evening dose as powder in the food. The morning after he had the last dose the probang was introduced and one ounce of Lysol in a pint of water introduced into the stomach. An hour after he was destroyed. Post mortem showed that the stomach had been irritated by the dose of Lysol. Careful examination only disclosed two or three Microstomas dead in the stomach. In the cæcum, however, the worms were innumerable. The conclusions are:

1. Sulphate of copper in large doses has no effect on the parasite.

2. Lysol in very strong solution, stronger than the medicinal, has the power of expelling the worms from the stomach, though not necessarily killing them.—(*Veterinary Record.*)

FRENCH REVIEW.

By Prof. A. Liautard, M. D., V. M.

Enormous Abdominal Tumor in a Slut; Removal; Death [*Mr. Schrader*].—A slut aged between six and seven years has been in heat, but not covered. It was noticed, however, that her abdomen was getting larger quite rapidly. She was brought to the author, who found her with an abdomen evenly distended, not painful, without fluctuation or tympanitis, but presenting a zone of dullness on percussion all over. The diagnosis was doubtful and reserved. A short time later, after another examination and when the condition had become more serious, an operation was suggested, and after preparation of the patient, asepsy and mixed anesthesia of Chloride of ethil and Chloroform, the abdomen was opened from the xyphoid cartilage to the umbilicus. The hand introduced detected a regularly ovoid tumor, free except toward the pelvic cavity, where it was held by peduncle. To bring it out of the abdominal cavity the incision had to be extended as far as the pubis. Ligatures were applied on the broad ligaments, and the growth being loose, was removed. It was a large fibroma, as big as ostrich's egg, weighed fourteen pounds. The dog died the second day from nervous shock.—(*Rev. de Pathol. Comparée.*)

Tuberculosis of the Spinal Cord in a Heifer [*Mr. E. Barrot*].—One year old heifer is found one morning unable to get up. Since a week she has had a peculiar gait. Efforts to make her get up are useless, the hind quarters will not move. The animal has had spells of coughing. She is in fair condition, but her skin is dry and adherent to the tissues underneath. She is sent to the slaughter house. Lesions: The lungs have a few tubercles. The pleurae are covered with them. Only a few on the liver. The vertebral column is open in its whole length and microscopically seems normal. No vertebra shows signs of tuberculosis. The spinal cord, opposite one of the last dorsal vertebra, shows a grey yellowish oval mass of tuberculous nature. Nearby there are several spots of acute tuberculosis. Section of the cord reveals that the organ is involved in its entire thickness.—(*Rev. Veter.*)

PRETHORACIC LYMPHADENOMA IN A MARE [*Mr. Adrian*].—Seven years old mare in fair condition has several spells of coughing, which are supposed to be due to a simple laryngo-bronchic irritation. After a few days there appears between the forelegs an œdematous tumor. This increases, spreads toward the base of the neck, pushes the legs apart. There is also a zone of dullness in the lower parts of the chest and the prepectoral lympathic glands are swollen and painful. Invading neoplasm is suspected in the chest and in a short time the animal dies with asphyxia. At the autopsy the subcutaneous tissue of the chest is found the seat of a large œdema. The superior brachial, prepectoral, bronchial and mediastinal glands are largely hypertrophied and altogether form a large tumor surrounding all the vascular and nervous organs of the entrance of the chest, as well as the trachea and the œsophagus. There were some 5 or 6 litres of fluid in the pleural cavities. The histological examination showed that it was a lymphadenoma containing numerous microbes (streptococci and staphylococci).—(*Soc. des Scien. Veter. de Lyon.*)

FRACTURE OF THE CRANIUM IN A HORSE [*Mr. G. Parant*].—While being exercised, a thoroughbred gelding nine years of age gets frightened by a piece of paper on the road. The rider whips him, the horse rears, falls backwards and remains dead on the ground. He lays on the right side and bleeds at the nose and from the right ear. About one litre of blood has escaped. Post mortem. Right lung congested with passive congestion. Both lungs are the seat of numerous parasitic tubercles. Nothing in the abdomen. Toward the head, the subcutaneous tissues are the seat of numerous hemorrhagic spots. The tuberous portion of the right temporal is fractured horizontally on a level with the auditory canal. The posterior sphenoid is also fractured right across. The meninges and the brain are congested. The circle of Willis is covered with a clot of blood from one of the cerebral arteries. Nothing on the cerebellum or in the ventricles.—(*Repertoire of Laquer.*)

INTOXICATION WITH COCAINE IN A CAT [*Mr. G. Parant*].—Two months' kitten has hypertrophy of the caruncula lachrymalis. Removal is indicated. Anesthesia with cocaine is resorted to. Five or six drops of a fresh 4 per cent. solution are pushed under the eyelid. The growth is removed. At the same time the cat is taken with violent convulsions, falls on the floor, his head

thrown backwards, his legs stiff and jerking with convulsions. Sight is entirely gone and the pupils are enormously dilated. This condition lasted fifteen minutes. Then gradually the animal could rise, stood trembling. Sight did not return for three hours. It was only after a few days that the animal was himself again. The author, sure of the quality of the preparation he used, asks if cats have a special sensitiveness to cocaine which could explain such manifestations.—(*Repertoire of Laquer.*)

SILICATE OF POTASH OCCLUDENT DRESSING [*L. Magnin*].—Used by the author for several years, this dressing is perfectly adapted for regions where the skin is rather adherent, such as the forehead, withers, back, etc., and also some regions of the extremities, where it is difficult to have rolls of bandages hold in place.

If the wound is not aseptic, clean it thoroughly with an antiseptic solution, then spray it with pure oxygenated water (10 or 12). Close the wound with silk or pins. Spray again with oxygenated water and a few minutes after, when the skin is well dried, with iodoformed ether. Then take a thin layer of hydrophile wadding, with thin irregular thready edges, lay it over the wound, leaving the edges extend quite freely beyond the surface of the wound, then let drop on its surface, in small quantity, Silicate of potash, which is spread with a spatula from the centre of the wound to its periphery. If the animal had been cast, it is necessary to wait until the dressing is dry before the animal is allowed to rise. If the wound has been soiled much, and a perforated drain is indicated, the application of the dressing is the same, having one end of the drain resting in the depth of the wound and the other hanging in the most dependent part of the solution of continuity. When properly applied, this dressing is very solid.—(*Rev. Gener. de Med. Veter.*)

SMALL SLUT SWALLOWS A BONE AND DIES FROM IT [*Mr. Barrat*].—The little thing presented very serious symptoms; dyspneic respiration, tongue cyanotic and hanging from the mouth, abundant salivation, inspiration followed with marked whistling sound. Any movement is penible and almost impossible. Has she rabies? The owner thinks she has swallowed a bone or been stung by a bee. While trying to raise her for better examination, she suddenly expires. At the post mortem a large clot of blood was found in the pharyngeal cavity, and on its walls an opening made by a sharp stylet-shape bone which is

perforating the carotid and jugular. Death was due to pressure made upon the trachea by the clot of blood and was hastened by the hemorrhage from the two blood vessels injured.—(*Rev. Veterin.*)

RECTO-COLIC ADHESION—LACERATION FOLLOWED BY DEATH [*Mr. G. Savary*].—The general way of acting of this thoroughbred is lacking, and he is unwilling to do his regular work. He has been so some time, and is supposed to be weak in his loins or suffering from his hocks. He is placed in observation. He has all the appearances of health, normal temperature, good appetite. However, in exploring the right hypochondriac region, he seems to show pains. Rectal examination is made after he has received an enema to clean it out. The arm is scarcely introduced, than at the entrance of the pelvis, on the floor of that cavity, a depression is felt, with soft bands running in different directions and giving the sensation of an ulceration. The hand is withdrawn and found covered with blood. From this day the animal had abdominal pains, and abdominal complications set in which, notwithstanding opiate treatment, was followed with peritonitis, which killed the horse on the seventh day. At the autopsy lesions of generalized peritonitis were found. The digestive organs were almost empty. The rectum is by its entire lower surface adherent to the superior and convex face of the pelvic curvature of the large colon. The rectal mucous membrane is destroyed by a large cicatricial ulceration, brownish, thick and lardaceous, having irregular edges easily torn. This is adherent more or less with the corresponding surface of the colon by fibrinous yellowish bands. This adhesion, which goes back to some time, was possibly lacerated at the time of the last rectal exploration.—(*Rev. Gener. de Medec. Veter.*)

GERMAN REVIEW.

By J. P. O'LEARY, V. M. D., Bureau of Animal Industry, Buffalo, N. Y.

PERHYDRASED MILK.—At the meeting of the Medical Society, held at Marburg, Drs. Römer and Musch reported that they had succeeded in producing a milk essentially unchanged in its raw natural properties and which was free of tubercle bacilli. The method was simply this, that by the addition of a

small quantity of hydrogen peroxide the milk is freed of living organisms. But this agent lends to the milk a slightly irritating taste, consequently it must be removed, and this is accomplished by the addition of from 2 to 4 drops per litre of the ferment expressed from a bloodless beef liver. This food, known as perhydrased milk, exhibits no essential difference from raw milk. Its superiority consists therein that it can be stored away for some time (seven weeks) without deteriorating. Further investigations have proven that when tubercle bacilli are mixed with the milk, they perish. As a result of this perhydrased procedure, albuminous and coagulating ferments produce no changes in it. In about half an hour after the addition of the ferment the hydrogen peroxide disappears completely from the milk. It is neither perceptible by taste nor by chemical reagents. The price is increased 1 cent per litre. One disadvantage that the milk possesses, it acquires a bitter taste when exposed to sunlight. It must, therefore, be stored in darkness.—(*Deutsche Landwirtschafle. Presse,* 33 *Vol., No.* 275.)

CONTRIBUTION TO THE STUDY OF THE ORIGIN OF ANTHRACOSIS PULMONUM [*Dr. Luttsschwager*].—In the present dissertation the author arrives at the following conclusions: That the circulation of the blood plays an important part in the distribution of pigments in the body. In several cases pigment was found in the wall of a blood vessel without macroscopical or microscopical pathological changes being discernible. The transition of pigment into the blood vessels must, therefore, be comparatively easy. The lymph channels cannot be considered as an exclusive medium, because in several cases pigmentation of the liver, spleen and kidneys was far more extensive than that of the lymph glands. However, the lymph channels are also considered. From this it follows that in cases where the coloring matter was taken up from the abdominal cavity—after feeding or intraperitoneal injections of Indian ink, the metastatic formations were especially abundant, while here a marked absorption of the ink through the lymph vessels of the abdominal cavity took place. Consequently it must be assumed that the coloring matter at the point of injection in the body is first taken up by the lymph spaces and lymph vessels, and then carried into the blood circulation without being entirely retained in the lymph vessels. As a rule it is further distributed throughout the body by means of the circulating blood.—(*Deutsche Tier. Wochenschrift, No.* 1 *and* 2, 1908.)

RECTAL EXPLORATION [*Dr. Jakob,* München].—The examination per rectum is becoming more important as an auxiliary method for diagnostic purposes than formerly. There is sufficient data at hand to emphasize its practicability. Jakob refers to five cases which came under his observation and which he describes briefly as follows: First cow, suspected of being tubercular. Manual exploration: At the pelvic inlet and slightly anterior to it there was felt, on both sides, nodular growths varying in size, firm, partly smooth, partly uneven, non-painful, and apparently attached to the peritoneum. Tuberculin test, positive. Diagnosis, tubercular peritonitis. Autopsy verified the result of manual exploration.

No. 2. Cow, emaciated without any apparent cause. Exploration, about 50 c.m. distant from the rectum, on the right side, a hard, knotty, tumor-like mass was felt, extending from the lumbar to the right hypochondriac region. Diagnosis, post-mortem, *adenoma renalis dextra.*

No. 3. Mare, poor appetite. Examination per rectum revealed in the vicinity of the uterus a spherical, nodular tumor of an indefinite size, very painful on manipulation; when pressure was applied on its surface a reddish-yellow urine escaped in drops, causing intense pain. Diagnosis, *carcinoma vesical urinæ.*

No. 4. Cow, affected with nymphomania. Exploration revealed two floating tumors about 40 c.m. distant from the rectum in the region of the pelvic inlet superiorly and in a line with the two posterior lumbar vertebræ. Tuberculin test, negative. Diagnosis, post-mortem, *adeno-carcinoma ovarii.*

No. 5. An emaciated cow with vaginal catarrh. Exploration per rectum. About 30 c.m. distant from the rectum, in the median line superiorly to the pelvic inlet and toward the post-lumbar vertebræ, a large, solid, floating tumor was felt with apparently two horny appendages (uterus) and to which was attached a hard, oval, nodular mass. Tuberculin inoculation, positive. Diagnosis, tuberculosis *uteri et ovarii.* Post-mortem examination verified the diagnosis.—(*Wochenschrift für Tier und Viehzucht,* 1907, *No.* 20.)

IODIPIN IN THE TREATMENT OF ADVANCED PNEUMONIA OF THE HORSE [*Dr. Cornelius-Dermbach*].—In a case of advanced pneumonia the author prescribed this much-lauded preparation. As the result is perhaps of interest to many practitioners he describes this particular case as follows: On August 9th he was

called to see a horse which had suffered from dispnœa and was extremely emaciated, although, according to the owner, the animal had a good appetite. C. diagnosed the case as an extensive pneumonia (broncho-pneumonia), and which, according to the history and clinical evidence, was of at least 14 days' duration. Treatment consisted of steamed turpentine inhalations, Priesznitz packs and embrocations of spirits of mustard. On the 15th, 20th and 24th of August, respectively, he made careful examinations of the patient, but could find no improvement; consequently he experimented with Iodipin. The patient was given on the 2d of September, 75 grams of a 25 per cent. Iodipin preparation (that used principally in veterinary practice), subcutaneously. This treatment being repeated on the 7th inst., the external applications being discarded. On September 11 indications presented a recovery as the respirations were reduced from 42 to 18 per minute. The cyanotic color of the conjunctiva disappeared, the coat became smooth and gistening. During a violent attack of coughing an abundant slimy discharge escaped through the nostrils. The horse received once again a subcutaneous injection of 50 grams of Iodipin and the owner was instructed to give the animal gentle exercise daily in the open. On September 18 complete recovery was visible—respirations 14 per minute, no râles were audible on auscultating the lungs. The horse was now put to light work, and on a ration of 18 pounds of oats daily. On October 2 the animal was in good condition and well nourished. An examination for broken wind proved negative. Cornelius was convinced that the horse would have died or at least suffered permanently in wind had not the Iodipin treatment been prescribed.—(*Berliner Tierärzt. Wochenschrift,* No. 16, 1908.)

Sugar and Fruit for Horses.—Grain is not the only food on which the horse thrives. In Egypt the khedive's best mares are fed largely on currants, and these fruit-fed animals are noted for their endurance and speed. Figs, during the fig harvest, form the food of the horses of Smyrna. They turn to it from oats or hay. The green tops of the sugar cane are fed to the horses of the West Indies and for long weeks in many parts of Canada windfall apples form the horse's only food. In Tasmania peaches and in Arabia dates take the place of hay and oats, corn and bran.—(*New Orleans Times-Democrat.*)

CANADIAN NOTES.

Occasional rumors of rabies are heard in Saskatchewan this year, although no thoroughly authenticated cases have so far been noted.

* * *

The campaign against glanders is being steadily and unflinchingly maintained, public sentiment growing daily more in favor of the mallein test administered by Health of Animal inspectors; many farmers asking for their horses to be tested.

* * *

The members of the Health of Animals Branch in Alberta and Saskatchewan, working under Dr. George Hilton for the past year, recently presented that gentleman with a beautifully engraved gold watch and chain and locket, as an expression of their esteem.

* * *

Dr. Simon F. Tolmie, Chief Inspector for British Columbia, of the Health of Animals Branch, is also representative for the Live Stock Division in that province. The portly doctor is well-known as a judge of live stock, especially of standard breeds and dairy breeds of cattle. His name was recently mentioned for the position of Secretary of Agriculture, for his native province. It is hoped that he will remain in the ranks of the profession.

* * *

Dr. R. A. McLoughry, Moosomin, in addition to keeping an eye on the health of live stock in his locality, keeps the horse breeding interests of his district well to the fore, maintaining standard bred and Hackney stallions at the stud. The increasing

number of good horses and cattle aid in making more work for the veterinary practitioners of the West. The past season, however, owing to the financial stringency, was an off year for collections.

* * *

A new policy has been enunciated by the Veterinary Director-General in dealing with mange. Compulsory dipping of all herds within the mange area is not insisted upon, but all herds containing diseased animals, or in contact with diseased animals, are quarantined, and dipped twice under official supervision in a dip made according to the official formula (lime and sulphur). The oil treatment has not proved entirely satisfactory so is not allowed this season for the treatment of mangy stock.

* * *

In the two new provinces of Alberta and Saskatchewan, reorganization of the work of the Health of Animals Branch, Dominion Department of Agriculture, has taken place. Dr. George Hilton, chief assistant to the Veterinary Director General, having returned to the capital, where he is at present Acting Veterinary Director-General, during Dr. Rutherford's absence at Rome, attending the Agricultural Congress. J. C. Hargrave, D.V.S. (McGill), and A. G. Hopkins, B.S.A. (Iowa), M.D.V. (McK.), have been given charge respectively of the provinces of Alberta and Saskatchewan, with headquarters at Medicine Hat and Regina.

* * *

The following veterinarians in Alberta are engaged administering the Animal Contagious Diseases Act, under the supervision of Dr. J. G. Rutherford, Veterinary Director-General, through Chief Inspector J. C. Hargrave, Robert Riddell, V.S., A. M. McKay, V.S., and C. McVeigh, V.S., Calgary; M. V. Gallivan, V.S., Lethbridge; V. V. Christie, V.S., Kimball; D. Warnock, M.R.C.V.S., Pincher Creek; W. T. Patton, V.S., Coutts; J. D. Paxton, V.S., Edmonton; R. C. Nyblett, V.S., Medicine Hat; A. Watson, V.S., Assistant Pathologist, Quarantine Station, Lethbridge; G. C. Pinhorn, V.S., Pendant d'Oreille; A. Busselle, V.S., Macleod; T. LeClaire, V.S., High River; R. C.

Brewster, V.S., Claresholm, are on the temporary staff during stock inspection. At present, owing to there being only one abattoir (packing house), that of Pat Burns, carrying on an export or interprovincial trade in Alberta, the work under the meat and canned goods act is directed from Ottawa, two veterinary inspectors being employed.

* * *

The Saskatchewan veterinarians have been less successful than their Alberta and Manitoba brethren in getting their bill through the Legislature, unfortunately the bill was not presented until the late hours of the session and on account of amendments became pigeonholed and missed the third reading. The amended bill will, it is understood, provide for veterinary education being placed under the control of the provincial university, as also the licensing of practitioners. While there is practically no opposition to the bill, the farmer members feel that already too much power has been conferred on the legal and medical professions, and will not confer in future such unlimited powers. At the present time there is on the statutes of Saskatchewan a bill preventing others than graduates of three-year schools, approved by the A.V.M.A., being allowed to practice in the province. With regard to the provision in the bill permitting the establishment of a veterinary college, the feeling of those members really interested in the welfare of the profession is, that one first-class English-speaking veterinary college is ample to meet Canadian requirements for years to come.

THE habit of looking at the best side of every event is worth more than a thousand a year.—(*Johnson.*)

WHAT HE WAS.—Senator Gilchrist, discussing in Albany his insurance bill, said of speculation:

"Speculative features, uncertainties, ought to be removed from our life as much as possible.

"When I think of speculation, I think of a man I know.

"This man, a conservative, suddenly took to stock gambling. At the end of a flurry I met him one afternoon and asked:

"Well, were you a bull or a bear to-day?"

"'Neither,' he answered, giving me a sour smile. 'I was an ass.'"—(*Washington Star.*)

LEGISLATION AT ALBANY.

Explanation.—Matter *in italics* is new; matter in brackets [] is old law to be omitted.

AN ACT to amend the agricultural law, in relation to the diseases of domestic animals. and making an appropriation therefor.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. A new section is hereby added to the agricultural law, to be known and designated as section sixty-three-a and to read as follows:

§ 63a. Care of diseased animals; experiments.—If after examination an animal is, in the judgment of the person making the examination, suffering from tuberculosis, such animal shall be slaughtered under the provisions of this article, or, if the commissioner deems that a due regard for the public health warrants it, he may enter into a written agreement with the owner, subject to such conditions as the commissioner of agriculture may prescribe, for the separation and quarantine of such diseased animal or animals. Subject to the regulations of the department of agriculture, such diseased animal or animals may continue to be used for breeding purposes and its or their milk, after pasteurization at one hundred and eighty-five degrees Fahrenheit, may be used for the manufacture of butter or cheese or for sale. The young of any such diseased animal or animals shall, immediately after birth, be separated from their mothers, but may be fed the milk drawn from such affected animal or animals so separated and quarantined after such milk has been pasteurized as herein provided. The owner of a herd of cattle, within the state, may apply to the commissioner of agriculture for examination of his herd by the tuberculin test; said application to be in writing upon a blank form provided by the commissioner of agriculture and to include an agreement on the part of the owner or owners of the herd to improve faulty sanitary conditions; to disinfect his premises, should diseased cattle be found, and to follow instructions of the commissioner of agriculture designed to prevent the reinfection of the herd and to suppress the disease or prevent the

spread thereof. The commissioner of agriculture shall, as soon as practicable, cause such cattle to be examined accordingly, subject to the provisions of the agricultural law. When the commissioner deems that the conditions warrant it he may make and issue to such owner a certificate that upon such examination such herd was found free from tuberculosis or that the owner has complied with the provisions of this section by causing all affected animals to be separated from the herd and quarantined as provided herein subject to the regulations of the department of agriculture. The commissioner of agriculture may determine the place of slaughter of an animal to be killed under the provisions of the agricultural law. The commissioner may experiment or cause such experiments to be made or performed as he may deem necessary to ascertain or determine the best methods or means for the control, suppression or eradication of communicable or infectious disease or diseases affecting domestic animals. No person shall sell any animal known to have a communicable or infectious disease except for immediate slaughter unless such sale be made under a written contract signed by both parties specifying the disease with which such animal is infected, a copy of which shall be filed in the office of the Commissioner of agriculture. No person shall knowingly inject into any bovine animal as and for tuberculin any substance which is not tuberculin.

§ 2. Section sixty-seven of such chapter, as amended by chapter three hundred and twenty-one of the laws of nineteen hundred and one, and chapter two hundred and fifty-three of the laws of nineteen hundred and four, is hereby amended to read as follows:

§ 67. *Bureau of veterinary service; chief veterinarian;* appraisers [of condemned animals].—*There is hereby established in the department of agriculture a bureau of veterinary service. The bureau shall be in charge of a chief veterinarian, who shall be an experienced veterinarian appointed by the commissioner of agriculture. He shall receive an annual salary of three thousand dollars and all necessary traveling and other expenses incurred in the performance of his duties. Such chief veterinarian or other veterinarians employed by the commissioner shall have all the powers of an appraiser of condemned animals under this article. The chief veterinarian shall, under the direction of the commissioner of agriculture, have general charge of the enforcement of the provisions of this article, and shall collect and disseminate through farmers' institutes or otherwise, as the commissioner may direct, information and statistics in relation to the diseases of*

domestic animals, the proper care and sanitation of stables and other buildings used for the stabling of farm animals for the purpose of preventing the existence and spread of infectious and contagious diseases, the methods of feeding, the methods of improving the breed or milking qualities of cattle, and such other matters as the commissioner may direct. All veterinarians in the state shall immediately report to the commissioner of agriculture the existence among animals of any infectious or communicable disease coming to their knowledge. The report shall be made in writing and shall include a description of the diseased animal or animals, the name and address of the owner or person in charge of the animal, if known, and a statement as to the location of the animal. No person shall conceal or attempt to conceal any animal suffering from an infectious or communicable disease so that the same shall not come to the knowledge of the commissioner of agriculture. The commissioner of agriculture may appoint and at pleasure remove two confidential agents at salaries not to exceed eighteen hundred dollars, to be fixed by the commissioner, to assist in carrying out the provisions of this statute. [The commissioner of agriculture] *He* may appoint and at pleasure remove one state appraiser of condemned animals, [The person so appointed shall be] *who shall be* a person of experience and well acquainted with the value of farm animals [.]; *and* [He] shall receive an annual salary of fifteen hundred dollars, and all necessary traveling and other expenses incurred in the performance of his duties. The commissioner of agriculture may [also appoint] *employ* from time to time such additional appraisers of condemned animals as the work of his department may necessitate, [such appraisers] *who* shall receive [a] compensation *at the rate* of five dollars per diem and all traveling and other expenses necessarily incurred while engaged in the performance of their duties.

§ 3. Section sixty-eight of such chapter, as amended by chapter three hundred and twenty-one of the laws of nineteen hundred and one, is hereby amended to read as follows:

§ 68. Appraisal of diseased animals.—[One of the state appraisers of condemned animals shall be present at the examination of all diseased animals when such examination is conducted under this act, for the purpose of determining whether such animal should be slaughtered. Such] *An* appraiser shall determine the value of each animal directed to be slaughtered. Such value shall be the market value of such animals at the time of making [such

examination as though the animals were not diseased] *the appraisement,* but the appraisal value of each [head of cattle] *animal* shall not exceed the sum of [sixty] *seventy-five* dollars[, if a thoroughbred, and forty dollars if a grade]. If the value of the condemned animals determined by the appraiser is not satisfactory to the owner of such animals, the value shall be determined by [the] arbitrators, one to be appointed by the state appraiser and one by the owner of the animals. If such arbitrators are not able to agree as to the value of the animals, a third arbitrator shall be appointed by them. The value determined by such arbitrators *shall not exceed the limits established by this act and, after approval by the commissioner of agriculture,* shall be final. [The costs and expenses of the proceedings before the arbitrators shall be paid by the owner of the animals.] *The arbitrators selected by the owner of the animals shall be paid by the said owner, the other arbitrator or arbitrators shall be paid by the state at a rate of compensation not to exceed five dollars per day and necessary expenses.* [No cattle claimed to be a thoroughbred shall be appraised as such unless the owner thereof shall furnish to the state appraiser a duly executed certificate of registry.] Such appraiser of condemned animals and the arbitrators appointed under this section may administer oaths to and examine witnesses.

§ 4. Section seventy-a of such chapter, as inserted by chapter three hundred and twenty-one of the laws of nineteen hundred and one, and amended by chapter one hundred and sixty-seven of the laws of nineteen hundred and five, is hereby amended to read as follows:

§ 70-a. Compensation to owners of animals destroyed.—The actual appraised value, [not to exceed forty dollars] at the time they are killed of all animals slaughtered under the provisions of this article, which shall be found upon a post-mortem examination not to have had the disease for which they were slaughtered, unless the same were killed on account of the violation of quarantine regulations, shall be paid to the owners of such animals. If such animals are found upon post-mortem examination to have been suffering from [the disease of] tuberculosis, then they shall be paid for in the manner following, to wit: If an animal [had] *has* localized tuberculosis, the owner thereof shall be paid [sixty] *eighty* per centum of the appraised value. If the animal has [been suffering with] generalized tuberculosis, the owner thereof shall be paid therefor [forty] *fifty* per centum of the appraised

value, but no animal slaughtered under the provisions of this article shall be paid for as herein provided unless the said animal shall have been within the state for a period of at least [one year] *six months. If the meat of the slaughtered animal shall be passed for use as food, under official regulations, the commissioner of agriculture is hereby authorized to sell the same and the proceeds from the sale of the meat, hide and other marketable parts of the said animal shall be paid into the state treasury. For each and every day the owner or custodian of the animals condemned is obliged to keep them, in excess of seven days from the date of the condemnation, he shall be allowed and paid the sum of twenty-five cents per day per head.* The certificate of appraisal, *and* the statement of the result of the post-mortem examination, shall be presented by the owner or his legal representatives or assigns to the commissioner of agriculture. The commissioner of agriculture shall issue his order for the amount due as shown by such certificate and statement, *after he has found them to be correct,* which shall be paid by the state treasurer on the warrant of the comptroller out of moneys appropriated therefor. [If the owner of the cattle is dissatisfied with the appraisal he may take his claim to the court of claims, which court shall have exclusive jurisdiction to hear, audit and determine all claims which shall arise under the provisions of this article for compensation for animals slaughtered and to allow thereon such sums as should be paid by the state.] No compensation shall be made to any person who has wilfully concealed the existence of disease among his animals or upon his premises, or who in any way by act, or by wilful neglect has contributed to spread the disease sought to be suppressed or prevented, nor for any animal which upon a post-mortem examination is found to have the disease on account of which it was slaughtered or any dangerously contagious or infectious disease that would warrant the destruction of such animal, except as herein provided.

§ 5. The sum of two hundred thousand dollars is hereby appropriated out of any money in the treasury not otherwise appropriated for the purpose of article four of this statute.

§ 6. This act shall take effect immediately.

NOTE.—The appropriation of $200,000 was cut down to $70,000, which, added to the $75,000 Dept. had, makes $145,000.

POLO, as usual, this season is immensely popular at many fashionable resorts.

CORRESPONDENCE.

THE NEW SCHOOL REPLIES.

COLLEGE OF VETERINARY MEDICINE, 2113–15 FOURTEENTH STREET, N. W.
The George Washington University, Washington, D. C.

June 13, 1908.

Office of the Secretary.

Editors American Veterinary Review, New York City:

DEAR SIRS—The correspondence in your last issue relative to the new Veterinary School in connection with George Washington University, which is to be established in Washington, D. C., does this young school a great injustice. I trust you will give this letter the same prominence you favored Dr. French's letter in your last issue.

The facts are these:

The correspondence between Dr. D. E. Buckingham and Dr. H. H. Newcomb was shown to the newly organized Veterinary Faculty of the George Washington University and was disapproved by it, though the commercial spirit of it was identical with that which obtains among the large colleges which send their agents (deans or professors) among the preparatory schools every winter and spring to impress prospective students with the merits of their respective colleges.

Aside from this short explanation, I feel it is unnecessary to further any professional rancor between the writers of the before-mentioned correspondence which was undoubtedly the basis of this undeserved attack, affecting not only Dr. Buckingham, who was not Dean of the College at that time, but also the entire faculty.

The veterinarians and scientists who will devote their time and labor in teaching in the College of Veterinary Medicine of the George Washington University, request their professional brothers to suspend judgment until they are able to properly judge this school by its organization, teaching force and equipment.

The prospectus and announcement will be issued this month, and I believe that all fair minded veterinarians will readily see by the men who honor it with their names that the school will

be operated in a manner to meet the most advanced requirements of the Association of Veterinary Faculties and that its business methods will be thoroughly ethical and above reproach.

Yours truly,

J. P. TURNER, V. M. D., *Secretary,*
Board of Trustees.

MONUMENT TO THE LATE PROFESSOR THOMASSEN.

AGRICULTURAL COLLEGE, N. D., June 5, 1908.

Editors AMERICAN VETERINARY REVIEW:

DEAR SIRS—

A few days ago I received a communication from Prof. H. Markus, of the Utrecht Veterinary School, stating that arrangements were being made for the erection of a monument to the late Professor Thomassen during the International Veterinary Congress in 1909. He asks me to bring this to the notice of the American veterinary profession and to invite them to participate in the arrangement and to contribute to the funds which already are being subscribed to.

It is needless to say that I am glad to comply with this request. Thomassen and his work on the treatment of actinomycosis, on the identity of human and bovine tuberculosis, on immunity against tuberculosis and on the etiology of "roaring" are all so well known as not to require special mention. Thomassen was honored by our A. V. M. A. by the election to honorary membership, and I have no doubt that our profession, either by individual effort or by action of our professional organizations, will be found willing to do honor to the memory of a great veterinarian, a man who has done more than his share in the upbuilding of our profession. Contributions will be received by Prof. H. Markus, Veterinary School, Utrecht, Netherlands.

Thanking you for anything which the REVIEW may see fit to do in this matter, I remain,

Yours sincerely,

L. VAN ES.

THE MONTANA SMOKE CASE AGAIN.

CHICAGO, June 20, 1908.

The Editors of the AMERICAN VETERINARY REVIEW,

GENTLEMEN:

J. K. Haywood, Chief of the Miscellaneous Laboratory of the Bureau of Chemistry, U. S. Department, in a government bulletin, No. 113 of that bureau, issued May 26th, 1908, entitled "Injury to Vegetation and Animal Life by Smelter Wastes," states the results of his investigation of inquiry to cattle by arsenic in the vicinity of the Washoe Smelter in Deer Lodge Valley. He was detailed by the government to investigate the injury to vegetable and animal life by smelter wastes around Anaconda, Montana, during a larger share of 1906 and the whole of 1907.

A claim made by the farmers, which required investigation, was that enough arsenic is given off from the smelter to settle on the surrounding forage crops and so poison the cattle. To determine this it is first necessary to show that the ores reduced at the smelter contain arsenic. Examinations of several samples of ore from mines which partly supply the smelter gave the following results:

TABLE V.—ARSENIC CONTENT OF ORE SAMPLES.

Serial No.	Name of mine furnishing ore	Metallic Arsenic	Serial No.	Name of mine furnishing ore	Metallic Arsenic
		Per cent.			Per cent.
4258.....	Speculator	12.95	4261.....	Never Sweat	0.45
4263.....	"	2.54	4262.....	Diamond.....	1.17
4259.....	Parrot.....	.51	4264.....	Anaconda.....	None
4260.....	"	.45			

If we reject the first sample in Table V. as exceptional and consider the other ores as representative of those received at the Washoe Smelter, it will be seen that such ores contain 0.85 per cent. of arsenic. At this, if 8,000 tons of ores per day are smelted, which is the usual output of these mines per diem when at full blast, 68 tons of arsenic enter the plant each day, and, according to the officers of the smelter, only 2 tons of white arsenic are recovered daily. This, of course, does not mean 2

tons of metallic arsenic, but, for convenience of discussion, it will be considered as such. There remain, therefore, 66 tons of arsenic to be accounted for, which can only escape in a volatile form in the fumes, or be carried off in the tailings and slag. A determination of arsenic was made in two samples taken from the dump in which 0.11 and 0.09 per cent. were found, or an average of 0.09 per cent. It is evident that the amount found in the dump cannot account for the 66 tons of arsenic that go to waste; hence a considerable quantity must be volatalized. According to the investigations of Harkins and Swain, previously mentioned, the average amount of arsenic trioxid thrown off in the smoke during twenty-four hours is 59,270 pounds. Here again, however, as in the case of the sulphur compounds, the quantity of ores used was not given.

It is next necessary to show whether or not the escaping arsenic settles on the surrounding forage crops in large enough amounts to be injurious to cattle. For this purpose 20 samples of range grass and such cultivated crops as alfalfa were collected at distances varying from 1 to 10 miles from the smelter in various directions, but more especially down the Deer Lodge Valley. These samples were examined for total and soluble arsenic. The results obtained, calculated to a dry basis and expressed both as milligrams of arsenious oxid per gram of sample and grains of arsenious oxid per daily ration of 25 pounds, are given in Table VI.

From this table it is seen that arsenic was found in considerable quantities in every sample examined. In order that the cattle in this region may live at all it is evident that they must become confirmed arsenic eaters. Through the courtesy of Dr. D. E. Salmon the writer was able to examine microscopic sections and gross specimens of the viscera of a number of cattle that it was thought had been killed by eating forage containing arsenic. It was noted that the gastro-intestinal tract was inflamed and sections of the glands of the stomach and kidneys showed a desquamation of the epithelium, cloudy swelling, and in some cases fatty degeneration. The symptoms described by the farmers include inflammation of the mucous membrane of the upper air passages, running from the nose, diarrhea, thirst, emaciation and an inco-ordination of gait. From the above symptoms and post-mortem appearances, together with the amount of arsenic found in the various forage plants, there can be but little doubt that the cattle were killed by arsenic.

To give some idea of the distribution of arsenic on the soil in the vicinity of the smelter, samples were taken to a depth of

TABLE VI.—ARSENIC CONTENT OF FORAGE EXPRESSED AS ARSENIC OXID.

(Calculated to dry basis.)

Serial No.	Description of sample	Approximate distance and direction from smelter	Arsenious oxid per gram of dry sample	Arsenious oxid per 25 pounds avoirdupois of dry ration	Water soluble arsenious oxid per gram of dry sample	Water soluble arsenious oxid per 25 pounds avoirdupois of dry ration
			Milligram	Grains	Milligram	Grains
4114....	Bunch grass.....	2 miles N.....	0.103	18.0	0.083	14.5
4106....	*Alfalfa.....	2½ miles N.....	.069	12.1	.041	7.2
4115....	Pasture grass...	3 miles N.....	.069	12.1	.028	4.9
4117....	Range grass.....	"	.054	9.5	.034	6.0
4116....	Pasture grass..	4 miles N., Lost Creek.	.041	7.2	.020	3.5
4107....	Red top.....	4 miles N. E....	.028	4.9	.014	2.5
4118....	Clover	"	.054	9.5	.028	4.9
4119....	Range grass.....	"	.090	15.8	.020	3.5
4120..	Alfalfa and clover just cut.....	4½ miles N. E..	.054	9.5	.020	3.5
4108....	*Red top.....	5 miles N. E....	.055	9.6	.028	4.9
4121....	Range grass.....	"	.090	15.8	.069	12.1
4122....	"	6 miles N. E....	.104	18.2	.041	7.2
4123....	"	8 miles N. E....	.055	9.6	.028	4.9
4109....	Alfalfa.....	10 miles N. E....	.070	12.3	.042	7.4
4124....	Red top.....	1 mile S. E.....	.069	12.1	.041	7.2
4112....	Bunch grass.....	3 miles E.....	.042	7.4	.020	3.5
4110....	*Field grass.....	6 miles E.....	.055	9.6	.041	7.2
4111....	*Hay.....	"	.041	7.2	.028	4.9
4125....	Range grass.....	4 miles W.....	.055	9.6	.028	4.9
4113....	Bunch grass.....	6½ miles W.....	.055	9.6	.028	4.9

* Supposed to have killed cattle.

2 inches at varying distances from the plant. Since it might be claimed that any arsenic found in these samples was naturally present in the soil and did not come from the smelter fumes,

similar samples beyond the apparent range of the smelter smoke were also taken and examined for arsenic. The results obtained are given in Table VII.

TABLE VII.—ARSENIC CONTENT OF SURFACE TWO INCHES OF SOILS, EXPRESSED AS METALLIC ARSENIC.

(Calculated to dry basis.)

Serial No.	Approximate distance and direction from smelter	Arsenic per gram of dry soil	Arsenic in surface two inches (*) of soil per square foot	Serial No.	Approximate distance and direction from smelter	Arsenic per gram of dry soil	Arsenic in surface two inches (*) of soil per square foot
		Milligram	Grains			Milligram	Grains
4176	2 miles N.....	0.50	40.2	4179	3 miles E.....	0.20	16.1
4169	3 miles N.....	.30	24.1	4170	6 miles E.....	.08	6.4
4171	"	.50	40.2	4177	"	.08	6.4
4173	4 miles N. E..	.20	16.1	4181	4 miles W	.30	24.1
4180	5 miles N. E..	.30	24.1	4175	6½ miles W ..	.25	20.1
4174	6 miles N. E..	.30	24.1	4165	15 miles W ...	None	None
4178	8 miles N. E..	.08	6.4	4163	10 miles S. E .	None	None
4172	1 mile S. E ...	.50	40.2				

*Calculated on the basis of 69 pounds as the average weight of a cubic foot of surface soil.

From this table it is evident that the surface 2 inches of all soils examined in the vicinity of the smelter, at distances varying from 1 to 8 miles, contain large amounts of arsenic. It is also shown that this arsenic must come from the smelter, since the two soil samples taken beyond the apparent range of smelter smoke do not contain any arsenic.

From our point of view, the toxicological and pathological evidence in the case alone is of advantage. A mammoth manufactory, like the Washoe Smelter, may force the rural inhabitants of the Deer Lodge Valley to give way to it, though their cattle be continually destroyed by arsenical emanations from the smoke stacks. To us the case is interesting as an example of arsenical poisoning of cattle on a gigantic scale. Mr. Haywood clearly shows the proportions of arsenic emitted by the smelter and the rôle so much a quantity of volatized arsenic as sixty-six tons per diem—for such was the arsenic content of the forage expressed as arsenious acid—in the destruction of vegetation and cattle alike. Mr. Haywood, good toxicologist

as he may be, probably paraphrases Dr. Salmon when he speaks of the symptoms and post-mortem appearances found in the stricken cattle. The report is made that one of the pathologists of the Bureau of Animal Industry, U. S. Department of Agriculture, has made a very thorough study of the post-mortem appearance of cattle dead in the Deer Lodge Valley region and will give the results of his work in the future. Meanwhile everyone interested in the toxicological side may obtain Mr. Haywood's bulletin by application.

D. ARTHUR HUGHES, Ph. D., D. V. M.

OBITUARY.

WILLIAM W. ANDREWS, D.V.S.

William W. Andrews, D.V.S., graduate of the New York-American Veterinary College, class of 1904, died at Brooklyn, N. Y., June 8, 1908, just four months after the death of his distinguished uncle, the lamented Roscoe R. Bell. Dr. Andrews' death was caused by rheumatic fever and occurred after an illness of two and a half weeks duration.

He was born at Charlottesville, Virginia, July 13, 1883, where his body was returned for burial. He was the eldest son of Mr. Julius B. Andrews, a noted dealer in high-class horses for many years at the American Horse Exchange, New York City, where his striking physique is still familiar to all horsemen.

WANTS CATS EXTERMINATED.—In his annual report to Governor Stuart, of Pennsylvania, Secretary Joseph Kalbfus of the State Game Commission recommends that the Governor in his next message to the Legislature ask that body for legislation by which the state shall pay a bounty on the scalps of the ordinary house cat. House cats, says Secretary Kalbfus in supporting his suggestion, are the greatest destroyers of bird life in the world, and he would like to see the cats annihilated, for until that is done the birds are not safe.

SOCIETY MEETINGS.

AMERICAN VETERINARY MEDICAL ASSOCIATION.

Editors, AMERICAN VETERINARY REVIEW:

DEAR SIRS—It would seem feasible to solicit space for a brief preliminary announcement of the approaching meeting of the A. V. M. A., even though the details, which are now beginning to draw into a harmonious unit, have scarcely reached a stage which can adequately meet with the expectancy of the profession; by another issue, however, we will hope to add further to the literary, clinical and social features, and thus substantiate this promise of a rare treat awaiting the veterinary profession when it assembles in Philadelphia.

Negotiations with the railroads are already sufficiently matured to offer attractive reductions throughout the territory of the Trunk Lines Association and to veterinarians contemplating journeying from the Pacific coast.

The literary program promises much, and at this time includes contributions as follows:

1. Dr. W. P. Ellenberger—"The Eradication of the Cattle Ticks in the South." Discussion opened by Dr. Tait Butler.
2. Dr. J. W. Connaway—"Hog Cholera."
3. Dr. W. Reid Blair—"The Pathological Effects of Captivity on Wild Animals."
4. Dr. C. H. Jewell—"Shipping Fever."
5. Dr. C. C. McLean—"Milk and Milk Inspection."
6. Dr. Lloyd Champlain—"The Hygiene of Dairying."
7. Dr. R. A. Ramsay—"Field Work in the West."
8. Dr. B. R. Rogers—"Tuberculosis."
9. Dr. S. J. J. Harger—"The Bier Treatment."
10. Dr. C. G. Lamb—"Our Personal Responsibility to the Profession."
11. Dr. H. S. Smith—"The Rôle of Protozoa in Pathology."
12. Dr. H. D. Gill—"Equine Glanders."

Among the other contributors, but not having yet announced the titles of their papers, are: Frederic J. Mayer, M. D., Special Medical Inspector to the Louisiana State Board of Health; Dr. D. Arthur Hughes, Dr. N. S. Mayo, Dr. H. Jensen, Dr. F. C.

Grenside and Dr. T. Bent Cotton. A few more papers are needed, likewise, clinicians should be secured, it is hoped that these will be forthcoming in the immediate future. Papers specializing on canine, bovine, equine, or, in short, topics embracing one or more of the ramifying fields of comparative medicine are solicited. Send your title at once.

Applications for membership should be secured; each member owes it to the profession to show the advantages that our uniformed associates may gain by obtaining membership in the A. V. M. A. Every member has been supplied with an application form; if more are needed they may be had for the asking. It is taken for granted that the members will pull together and make the Philadelphia meeting noteworthy from a standpoint of new members by the quality of the literary program, the clinical features and also by making good fellowship apparent upon all sides.

Let all veterinary surgeons, members or not, readers of the REVIEW, make plans that will bring them to Philadelphia on September 8, 9, 10 and 11, 1908.

Yours very truly,

RICHARD P. LYMAN, *Secretary.*

CALIFORNIA STATE VETERINARY MEDICAL ASSOCIATION.

The regular quarterly meeting of the above association was held in San Jose June 10, 1908. The following program for the day was carried out:

9.30-11 a. m.—Clinics at Drs. Spencer and Healy's Infirmary, 224 East St. John street.

11 a. m.-2 p. m.—Interurban car ride, lunch at Los Gatos.

3-6 p. m.—Meeting of the association, Chamber of Commerce rooms.

7-10 p. m.—Banquet, followed by entertainment by local talent.

The meeting was called to order by President D. F. Fox, twenty members and eight visitors being present. The minutes of the last meeting were read and approved. In accordance with a motion passed at the last meeting President Fox declared the places of Drs. Thomas Carrol and C. B. Othier, on the Judiciary Committee, to be vacant. He appointed Drs. C. L. McGowan, of Sacramento, and Thomas Healy, of San Jose, in their stead.

Dr. Otis Longley, of Fresno, Chairman of the Judiciary Committee, reported that they had secured one conviction (Holmes, of Oakland), but that it had been appealed to a higher court. In another case (Dunbar, of Oakland) the jury had disagreed. A new prosecution was being held over his head and he had stopped practice. A lawyer was being employed to write to the various district attorneys. It is thought that a letter from a member of the bar to the district attorneys would have more weight than from the committee. "If there are annoying illegal practitioners in your locality notify one of the Judiciary Committee. The members of the committee are: Otis A. Longley, Fresno; G. J. Donnelly, Oakland; L. A. Danielson, Madera; C. L. McGowan, Sacramento, and Thomas Healy, San Jose.

"The committee will have their lawyer notify your district attorney, whose business it is to proceed against the quack. In case there is difficulty in securing evidence, the committee will send a detective to attend to that part."

Drs. Donnelly and Danielson also spoke of the good influence exerted by the prosecutions undertaken and threats sent out by the committee.

Dr. Browning spoke in favor of employing Attorney T. J. Jordan, had been successful in this kind of legal work.

The Secretary read a communication from Attorney George E. Maloney, Special Agent of the State Medical Society.

Dr. Archibald suggested that the matter of employing legal talent be left entirely to the Judiciary Committee.

Under the head of applications for membership a lengthy and heated discussion took place regarding the eligibility to membership in this association of the veterinarians who were licensed at the last meeting of the "old board" of State Veterinary Medical Examiners, which was held in Los Angeles in the spring of 1907. The following resolution was presented, moved and seconded: "That the possession by a veterinary graduate of a recognized college of a license issued at the above mentioned meeting should not debar his application for membership in the association from being considered." The motion was lost, seven voting in the affirmative and twelve in the negative.

There being no objection the meeting was opened under the head of new business.

Mr. Henry Dore, a prominent horse breeder of San Jose, spoke on the value of improving the stallions of the state and the need of a stallion registration law.

A motion was carried instructing the Secretary to convey to Governor Gillette the request of the association that Dr. R. A. Archibald be appointed one of the delegates from the state to the International Congress of Tuberculosis.

The Secretary read a communication from Secretary Lyman, of the American Veterinary Medical Association, inviting the association to send delegates to the Philadelphia meeting. A motion was made that it be placed on file and that the President be empowered to appoint delegates.

Mr. Brooks, Secretary of the San Jose Chamber of Commerce, made an interesting speech of welcome in which he described the great resources and prospects of the Santa Clara Valley.

Dr. Healy read a carefully prepared and instructive paper entitled " Blood."

Dr. Haring and Dr. Archibald spoke on Clinical Examination of the Blood and its possible value to the veterinarian.

Dr. Keane, State Veterinarian, spoke of the work that was being done through his office in fighting sheep scab. He said in part: " A law was enacted at the last Legislature designed to control the disease, but for certain reasons the Governor failed to sign it. The disease has caused great loss in this state and it was up to the State Veterinarian to do something. Through the assistance of a proclamation by the Governor, and the co-operation of various counties and the Bureau of Animal Industry, a systematic dipping of all the sheep of the state was begun. Over sixty inspectors are at work. About 5,000,000 dippings have been made since the first of March, and the work is still vigorously progressing. It is believed that the number of flocks in the state infected with scabies has been reduced from 75 per cent. to 6 per cent. The most efficient dips have been the tobacco dips and the lime and sulphur dip. Some of the cresol dips have proven unsatisfactory. The temperature of the dip should be between 105 and 110 degrees F. After July 1 the dipping is to be carried on only in flocks found to be infected with scabies."

Dr. Longley spoke of the good results he had experienced in the use of an antiseptic called Pix-cresol in the treatment of wounds.

Dr. Browning described an outbreak of an unknown disease which had caused great loss of calves in the Santa Clara hill regions.

President Fox appointed the following committee to draft resolutions to be presented at the next meeting and which may eventually be sent to the Legislature to assist in promulgating a law regarding the registration and examination of stallions: Dr. Longley, of Fresno; Dr. Browning, of San Jose, and Dr. Hogarthy, of Oakland.

A motion was carried that Dr. C. M. Haring's name be included with Dr. Archibald's in the Secretary's communication to the Governor regarding delegates to the International Congress on Tuberculosis.

A motion was carried instructing the Secretary of the association be authorized to convey to the Chamber of Commerce the thanks of the association for their entertainment.

A motion was carried expression the appreciation and the thanks of the association to the San Jose veterinarians for their hospitality.

Resolutions of thanks were voted to Drs. Healy and Keane for their part in the afternoon's program.

The association adjourned to meet in Alameda the second Wednesday in August.

C. M. HARING, *Secretary.*

VETERINARY ASSOCIATION OF THE DISTRICT OF COLUMBIA.

The regular monthly meeting of the above association was held on the evening of May 27 at 514 Ninth street, N. W., Washington, D. C. The President, Dr. John Lockwood, was in the chair. Those present were: Drs. A. M. Farrington, John Lockwood, C. B. Robinson, F. M. Ashbaugh, J. C. Heide, H. S. Gamble, M. Page Smith, E. S. Walmer, C. C. Weeks, H. F. Hungerford, T. H. McKeown.

Drs. J. C. Heide, T. H. McKeown, M. Page Smith, E. S. Walmer and C. C. Weeks were appointed as a committee on contagious diseases.

The committee, consisting of Drs. W. P. Collins, C. C. Weeks and C. B. Robinson, appointed at the last meeting to draft and present to the Commissioners of the District of Columbia resolutions recommending the muzzling of all dogs running at

large, with a view to the prevention of the spread of rabies, reported that they had done so but were advised that there was opposition to the muzzling of dogs; that the force of dog catchers had been increased, and that, by the elimination of stray and cur dogs it was hoped to curb the spread of the disease.

The members present reported undoubted cases of rabies in twenty-nine dogs, one cat and one horse, occurring in their practice during the period from May 1 to 27, inclusive; all these occurring in the District of Columbia. (The Bureau of Animal Industry reports positive post-mortem diagnoses of fourteen cases of rabies of dogs from the district within the same period.)

F. M. ASHBAUGH, *Secretary.*

SCHUYLKILL VALLEY VETERINARY ASSOCIATION.

This association held its Fifteenth Annual Session at the Board of Trade Room at Reading, Pa., on June 17, 1908.

The meeting was called to order at 1 P. M. by the President, Dr. Kohler. The minutes being recorded by the Secretary, Dr. Huyett.

The following members responded to roll-call: Drs. Bieber, Kohler, Huyett, Gruber, Noack, Newhard, Schneider, Wehr and McCarthy.

The minutes of the previous session were read and approved.

Upon the report of the Board of Trustees, Dr. H. F. Kauffman was expelled from membership for his delinquency in payment of dues.

The Secretary read his report, which was approved.

Dr. Huyett gave an excellent report as delegate to the last sessions of the Pennsylvania State Veterinary Medical Association.

Dr. Noack reported as delegate to the Keystone Veterinary Medical Association. He said: The Hotel Walton (Broad street), Philadelphia, would be the headquarters for the sessions of the American Veterinary Medical Association to be held in September, 1908. He furthermore referred to the International Congress to be held at Washington, D. C., the first Congress upon Tuberculosis to be in the United States, from September 21 to October 12. He urged the veterinarians to attend and become members of same.

Valuable suggestions were offered by the various members on the Committee of Milk and Meat Inspection.

Election of Officers—President, Dr. D. R. Kohler; Vice-President, Dr. F. H. McCarthy; Treasurer, Dr. U. S. Bieber; Recording Secretary, Dr. W. G. Huyett; Corresponding Secretary, Dr. C. D. Gruber.

Board of Trustees—Dr. E. D. Longacre, Dr. O. G. Noack, Dr. I. C. Newhard.

A motion was made and seconded that all the officers be elected by acclamation.

Dr. H. A. Schneider read an interesting paper, entitled "Dispensing and Prescribing of Drugs by the Veterinarian."

This subject was well discussed, and most of the members decided that it was not advisable to write many prescriptions, as the druggist often takes advantage of such prescriptions, and even your clients, and thus often become their own veterinarians, and have no need for the services of the practitioner.

Dr. Gruber, C. D., gave a contemporaneous talk upon Anthrax in Cattle.

Essayists for next session held on Wednesday, December 16, 1908, are Drs. Bieber on "Constipation in the Horse" and Kohler—subject not announced.

Adjourned at 4.30 P. M.

W. G. HUYETT, *Recording Secretary.*

YORK COUNTY (PA.) VETERINARY MEDICAL SOCIETY.

This society met in the parlors of the National Hotel, York, Pa., June 2, 1908. There was a good attendance of veterinarians from both city and country. The secretary's report was encouraging for the society. The members present discussed the following cases: Pleurisy, sunstroke, glanders, and the best way of stamping out of tuberculosis among cattle in the county and state. It was the consensus of opinion that more money should be appropriated by the legislature for the State Live Stock Sanitary Board so that the work could be carried out more thoroughly.

The next meeting will be held at York on Tuesday afternoon, September 1, 1908.

E. S. BAUSTICKER, *Secretary.*

NEWS AND ITEMS.

SECRETARY LYMAN has recovered.

THE B. A. I. has adopted a new padlock for use in the meat inspection service in official establishments.

Dr. B. F. KAUPP, of Kansas City, attended a state meeting of the Knights Templar at Columbia, Mo., June 9 and 10.

THE City Council of Winona, Minn., on June 15th elected Dr. G. Edward Leech, Inspector of Dairies and Dairy Products.

THE semi-annual meeting of the Veterinary Medical Association of New Jersey occurs at Newark on the 9th and 10th days of this month.

Prof. C. L. WILLOUGHBY, Experiment, Ga., has taken a special course of study in the veterinary and agricultural colleges at Cornell University.

Drs. LLOYD CHAMPLAIN and J. S. Barbee have been recently appointed veterinarians in the Food Inspector's Department of the Kansas City Board of Health.

Dr. A. T. KINSLEY, of the Kansas City Veterinary College, was Master of Ceremonies at an alumni banquet of the Kansas State College, at Manhattan, June 19th.

Dr. C. O. NETHERTON, of Gallatin, Mo., has just returned from an extended trip through the range country in Texas where he made his annual tour spaying heifers.

FORMER PRESIDENT OF THE A. V. M. A., William Herbert Lowe, was a guest at the annual banquet of the Veterinary Department of the University of Pennsylvania on the evening of June 17th.

DURING his recent visit to the Louisiana State University at Baton Rouge, at their commencement exercises, Dr. Henry Var. Dyke, of Princeton University, was entertained by our distinguished colleague, the President of the A. V. M. A.

Dr. WILLIAM DOUGHERTY, of Baltimore, recently paid an extensive visit to the senior Editor of the REVIEW at his country seat in France, and from Professor Liautard's own narration of it, it must have been an enjoyable time for both.

THE honorary degree of Master of Arts was conferred upon Prof. E. A. A. Grange, President of the Ontario Veterinary College, on June 23, 1908, at the fiftieth annual commencement exercises of the Michigan Agricultural College at Lansing, Mich.

SYMPATHY.—" What made you kick Jimpson? "

" He called me an ass."

" Oh, well, kicking is a characteristic of asses, but I shouldn't think you'd want to confirm Jimpson's statement so quickly."—(*London Telegraph.*)

WARD GILTNER, D. V. M., has resigned his position as Instructor in Pathology and Bacteriology and Assistant Veterinarian to the Alabama Agricultural Experiment Station to accept a position in the Department of Bacteriology, Michigan Agricultural College.

Dr. DAVID FRANKLIN LUCKEY, State Veterinarian of Missouri, Columbia, Mo., was married on June 24th to Miss Nan Frances, daughter of Mr. and Mrs. T. J. Doherty, of Doniphan, Mo. The REVIEW wishes Dr. and Mrs. Luckey much happiness in their new estate.

OBJECTIVELY CONSIDERED.—Ruggles—" What horse power is your new automobile? "

Ramage—" Two, I guess. That's the horse power it took to haul it to the repair shop when it broke down on a country road the other day."

W. N. HOBBS, D. V. S., Holton, Kansas, reports a case of a mare giving birth to a pair of twins, one a horse and the other a mule colt. The mare, not being a sure breeder, had been bred to a stallion and to a jack the same day. The mule colt came dead, but the horse colt is alive and doing fine.

THE POLITE BUTCHER.—Boy (in butcher's shop)—My mother sent me back to let you see what a big bone there was in the pound of beef she bought last night, and she wants another pound without bones. Butcher—Tell your mother the next time I kill a cow without bones I'll send her a leg for nothing.

DR. H. D. GILL, former president of the Road Drivers' Association, New York, has sold his champion speedway pacer, Coast Marie, 2.11¼, to a wealthy amateur reinsman of Kansas City. This mare is the crack pacer that twice won the $1,000 Morosini Cup on the Speedway and the championship cup on the Empire track.

A TRIUMPH OF SCIENCE.—"I have been taking some moving pictures of life on your farm."

"Did you ketch the hired man in motion?"

"I think so."

"Ah, science kin do anything these days!"—(*Louisville Courier-Journal.*)

THE REVIEW APPRECIATED ABROAD.—C. D. McMurdo, Veterinarian 10th Cavalry, writes from Fort Wm. McKinley, Manila, P. I.: "I have been travelling in Australia for ten months, and have in that period missed getting my REVIEW. * * * I saw a few copies of the REVIEW in Australia where it is much appreciated."

DR. ROBERT W. ELLIS was elected an associate member of Lloyd Aspinwall Post, No. 600, G. A. R., New York City, on the evening of June 25th. He was initiated with the Postmaster of New York City and several Congressmen who came on from Washington for that purpose. President Roosevelt was also recently made an associate member of the order.

EXAMINING BOARD IN WISCONSIN.—All veterinarians practicing in Wisconsin who were not registered with the Registrar of Deeds in the county in which they reside before the passage of chapter 334, Laws of 1907, are required by said act to appear before the State Board of Veterinary Medical Examiners for examination. Louis P. Helm, M. D. C., Baraboo, Wis., is secretary of the new board.

THE profession in Louisiana is making a great effort to accomplish three things in that commonwealth in the way of legislation, viz., a live stock sanitary law; a law to regulate the practice of veterinary medicine and surgery; and one to regulate the service of stallions and jacks. If the result depended upon the efforts of President Dalrymple, of the A. V. M. A., and his earnest colleagues in Louisiana, the needed legislation would be placed upon the statute books without delay.

ALBERT C. CRAWFORD, physiologist, Washington, D. C., has been transferred from the Bureau of Plant Industry to the Bureau of Animal Industry. Crawford recently made the important discovery, as reported in the June REVIEW, that the toxic substances in "loco" weed poisoning are inorganic salts for the most part of barium. The profession will await with much interest the publication of the complete report of his experiments which promises to be a most important contribution to science.

A MATTER OF INDIFFERENCE.—A Northerner riding through the West Virginia mountains came up with a mountaineer leisurely driving a herd of pigs.

"Where are you driving the pigs to?" asked the rider.

"Out to pasture 'em a bit."

"What for?"

"To fatten 'em."

"Isn't it pretty slow work to fatten them on grass? Up where I come from we pen them up and feed them on corn. It saves lots of time."

"Yass, I 'spose so," drawled the mountaineer. "But, ——, what's time to a hawg?"—(*Everybody's Magazine.*)

SIMPLE WHEN YOU KNOW HOW.—An innocent cockney while in the country asked a farmer how they managed to grow streaky bacon.

"Oh, it is simple enough," said the honest agriculturist. "One week we starve the pig or feed him very little. That makes a layer of lean meat. Next week we give him all he can possibly eat, even working him overtime, and that makes a row of fat. So by alternate starving and feeding we get the beautiful streaky bacon."

"Dear me," said the cockney, "and how do you make the ham?"

"Oh, we manage that by putting a ring in the pig's nose," was the reply.—(*London M. A. P.*)

REFUTATION OF OBJECTIONS TO THE TUBERCULIN TEST.—Dr. W. Reid Blair, veterinary pathologist of New York University, in an interview published in the *N. Y. Times* of June 12th, discussing a committee report of the Veterinary Medical Association of New York City on the value of the tuberculin test in refutation of objections recently raised to the employ-

ment of tuberculin in New York State as a diagnostic agent, says: "To substitute the physical examination for the tuberculin test, when it is practically impossible to detect tuberculosis in its earlier stages by clinical examination alone, would mean that the State expects to go forward by walking backward. When properly applied, the tuberculin test will detect 97 per cent. of all cases of tuberculosis, while all other known methods of diagnosis will not detect 3 per cent."

THE INTER-STATE ASSOCIATION OF LIVE STOCK SANITARY BOARDS.—The next meeting of this association will be held in Washington, D. C., September 14, 15 and 16. At this meeting subjects of great interest and importance to all veterinarians, and especially those who are engaged in any way in sanitary work, will be considered and discussed.

Since the meeting is to be held during the week between the adjournment of the American Veterinary Medical Association at Philadelphia and the opening of the International Congress on Tuberculosis at Washington, it will give those veterinarians who remain in the East for the Congress an excellent opportunity to profitably utilize at least a part of the time. Dr. Chas. E. Cotton, of Minneapolis, Minn., is Secretary of the Inter-State Association of Live Stock Sanitary Boards, and Dr. Chas. G. Lamb, State Veterinarian, Denver, Colorado, is President.

NATIONAL COMMITTEE ON THE INTERNATIONAL VETERINARY CONGRESS AT THE HAGUE.—In connection with his duties as the American representative on the Executive Committee of the International Veterinary Congress to be held at The Hague in 1909, Prof. Leonard Pearson has taken the initiative in organizing national committees for the countries of North and South America.

Prof. Pearson has invited the following named gentlemen to serve as members of the National Committee for the United States: V. A. Moore, Cornell University, Ithaca, N. Y.; Austin Peters, Boston, Mass.; F. A. Rich, Burlington, Vt.; R. P. Lyman, Hartford, Conn.; D. S. White, Columbus, Ohio; Wm. Herbert Lowe, Paterson, N. J.; W. H. Hoskins, Philadelphia, Pa.; S. H. Gilliland, Marietta, Pa.; A. D. Melvin, Bureau of Animal Industry, Washington, D. C.; John R. Mohler, Department of Agriculture, Washington, D. C.; P. H. Mackie, Baltimore, Md.; H. P. Eves, Wilmington, Del.; J. G. Ferneyhough,

Burkeville, Va.; Tait Butler, Raleigh, N. C.; C. A. Cary, Auburn, Ala.; Thomas Mahaffy, Jacksonville, Fla.; E. M. Ranck, Natchez, Miss.; Charles R. Jolly, Atlanta, Ga.; W. H. Dalrymple, Baton Rouge, La.; R. R. Dinwiddie, Fayetteville, Ark.; F. T. Eisenman, Louisville, Ky.; M. Francis, College Station, Texas; J. W. Connaway, Columbia, Mo.; F. S. Schoenlober, Manhattan, Kan.; C. Stewart, Chicago, Ill.; Jos. Hughes, Chicago, Ill.; H. K. McKillip, Chicago, Ill.; S. E. Bennett, Chicago, Ill.; J. R. Mitchell, Evansville, Ind.; J. H. McNeil, Ames, Iowa; C. E. Cotton, Minneapolis, Minn.; M. H. Reynolds, St. Anthony Park, Minn.; A. S. Alexander, Madison, Wis.; S. Brenton, Detroit, Mich.; M. E. Knowles, Helena, Mont.; S. B. Nelson, Pullman, Wash.; A. R. Ward, Berkeley, Cal.; A. T. Peters, Lincoln, Neb.; J. C. Norton, Phoenix, Arizona; M. Jacobs, Knoxville, Tenn.; E. R. Powers, Clemson College, S. C.; C. G. Lamb, Capital Bldg., Denver, Col.; E. Van Es, Agricultural College, N. D.; Victor Nörgaard, Honolulu, Hawaii.

The committee has it in its power to develop its membership if it should care to do so and a number of additions will, in all probability, be found advisable. Arrangements for a proper representation of the profession of this country at the Ninth International Veterinary Congress at The Hague in 1909 is among the duties of the committee.

The outline for the Congress provides for five sections which are to meet separately and coincidently as follows:

I. State veterinary affairs (contagious diseases, sanitary police, cattle insurance).

II. Anatomy, physiology, pathological anatomy and animal foods (inspection of meats, milk hygiene).

III. Practical veterinary medicine (internal medicine, surgery, ophthalmology, obstetrics).

IV. Animal breeding and veterinary hygiene.

V. Tropical hygiene and tropical diseases.

It has been the custom of the International Veterinary Congress to decide, in advance, upon certain topics which will be discussed before the Congress. After deciding upon these general subjects, an official reporter is appointed to prepare a formal paper on each of the subjects stated, and additional papers upon these subjects are received and a place is made for them on the program, provided they meet with the approval of the program committee and are announced in time.

VETERINARY MEDICAL ASSOCIATION MEETINGS.

In the accompanying table the data given is reported by many Secretaries as being of great value to their Associations, and it is to be regretted that some neglect to inform us of the dates and places of their meetings.

Secretaries are earnestly requested to see that their organizations are properly included in the following list :

Name of Organization.	Date of Next Meeting.	Place of Meeting.	Name and Address Secretary.
American V. M. Ass'n.....	Sept. 8,9,10 & 11.	Philadelphia..	R. P. Lyman, Hartford, Ct.
Vet. Med. Ass'n of N. J.....	July 9, 10, 1908..	Newark	W. Herbert Lowe, Paterson.
Connecticut V. M. Ass'n.....	Aug. 4, 1908.....	New Haven ..	B. K. Dow, Willimantic.
New York S. V. M. Soc'y.....	Sept., 1908.....	Utica.....	M. Hamilton, Delhi.
Schuylkill Valley V. M. A.....	Dec. 16, 1908....	Reading	W. G. Huyett, Wernersville.
Passaic Co. V. M. Ass'n.....	Call of Chair...	Paterson, N.J.	H. K. Berry, Paterson, N. J.
Texas V. M. Ass'n.....	Call Exec. Com.	.....	R. P. Marsteller, College Sta.
Massachusetts Vet. Ass'n.....	Monthly.....	Boston.....	Wm. T. White, Newtonville.
Maine Vet. Med. Ass'n	July	Portland	A. Joly, Waterville.
Central Canada V. Ass'n.....	.....	Ottawa	A. E. James, Ottawa.
Michigan State V. M. Ass'n.....	Feb. 2-3, 1909...	Lansing.....	Judson Black, Richmond.
Alumni Ass'n, N. Y.-A. V. C.....	April, 1909.....	141 W. 54th St.	T. F. Krey, N. Y. City.
Illinois State V. M. Ass'n.....	July 15, 1908.....	Galesburg.....	N. I. Stringer, Paxton.
Wisconsin Soc. Vet. Grad.....	.....	.....	S. Beattie, Madison.
Illinois V. M. and Surg. A.....	Aug. 4, 5 & 6 1908	Centralia	Frank Hockman, Louisville.
Vet. Ass'n of Manitoba.....	Not stated.....	Winnipeg.....	F. Torrance, Winnipeg.
North Carolina V. M. Ass'n.....	July 2-3, 1908...	Raleigh	Adam Fisher, Charlotte.
Ontario Vet. Ass'n.....	.....	.....	C. H. Sweetapple, Toronto.
V. M. Ass'n, New York City.....	1st Wed. ea. mo.	141 W. 54th St.	W. Reid Blair, N. Y. City.
Ohio State V. M. Ass'n.....	January, 1909...	Columbus.....	Sidney D. Myers, Wilmington
Western Penn. V. M. Ass'n.....	1st Wed. ea. mo.	Pittsburgh....	F. Weitzell, Allegheny.
Missouri Vet. Med. Ass'n	August, 1908....	St. Joseph....	F. F. Brown, Kansas City.
Genesee Valley V. M. Ass'n.....	.....	Rochester.....	J. H. Taylor, Henrietta, N.Y.
Iowa Veterinary Ass'n.....	.....	.....	H. C. Simpson, Denison.
Minnesota State V. M. Ass'n.....	July 8-9, 1908....	Duluth.....	C. A. Mack, Stillwater.
Pennsylvania State V. M. A.....	.....	Philadelphia..	F.H. Schneider, Philadelphia.
Keystone V. M. Ass'n.....	Monthly.....	Philadelphia..	A. W. Ormiston, 102 Herman St., Germantown, Pa.
Colorado State V. M. Ass'n.....	.....	Denver	M. J. Woodliffe, Denver.
Missouri Valley V. Ass'n.....	.....	Omaha	B. F. Kaupp, Kansas City.
Rhode Island V. M. Ass'n.....	Jan. and June..	Providence ...	T. E. Robinson, Westerly.
North Dakota V. M. Ass'n.....	.....	.....	C. H. Martin, Valley City.
California State V. M. Ass'n.....	2d Wed. in Aug.	Alameda.....	C.M.Haring, U. C., Berkeley
Southern Auxiliary of California State V. M. Ass'n.....	Jan.Apl.Jy.Oct.	Los Angeles..	J. A. Edmonds, Los Angeles.
South Dakota V. M. A.....	.....	Brooking	C. McDowell, Watertown.
Nebraska V. M. Ass'n.....	Oct. 6-7, 1908 ...	Grand Island.	H. Jensen, Weeping Water.
Kansas State V. M. Ass'n.....	Jan., 1909.....	Topeka.....	B. Rogers, Manhattan.
Ass'n Médécale Veterinare Française "Laval".....	1st and 3d Thur. of each month	Lec.Room,Laval Un'y,Mon.	J. P. A. Houde, Montreal.
Province of Quebec V. M. A.....	.....	Mon. and Que.	Gustave Boyer, Rigand, P. Q.
Kentucky V. M. Ass'n.....	.....	Not decided ..	D. A. Piatt, Lexington.
Washington State Col. V. M. A..	Monthly.....	Pullman, Wa.	Wm. D. Mason, Pullman.
Indiana Veterinary Association.	An'l, Jan., '09...	Indianapolis..	E. M. Bronson, Indianapolis.
Louisiana State V. M. Ass'n.....	.....	.....	E. P. Flower, Baton Rouge.
Twin City V. M. Ass'n.....	2d Thu. ea. mo .	St.P.-Minneap	S. H. Ward, St. Paul, Minn.
Hamilton Co. (Ohio) V. A.....	.....	.....	Louis P. Cook, Cincinnati.
Mississippi State V. M. Ass'n....	.....	.....	J. C. Robert, Agricultural Col.
Georgia State V. M. A.....	July, 1908.....	Atlanta.....	C. L. Willoughby, Experiment
Soc. Vet. Alumni Univ. Penn.....	June, 1909.....	Philadelphia..	B.T.Woodward,Wash'n,D.C.
Virginia State V. M. Ass'n	July 17, 1908....	Norfolk.....	W. G. Chrisman, Charlo'sv'le.
Oklahoma V. M. Ass'n.....	.....	.....	W. H. Martin, El Reno.
Veterinary Practitioners' Club....	Monthly	Jersey City ...	A. F. Mount, Jersey City.
Vet. Ass'n Dist. of Columbia.....	4th Wed. ea. mo.	514—9th St., N. W.....	F. M. Ashbaugh, Wash., D.C.
B. A. I. Vet. In. A., Chicago.....	2d Fri. ea. mo...	Chicago.....	J. Madsen, Chicago, Ill.
Arkansas Veterinary Society.....	.....	.....	B. H. Merchant, Little Rock.
York Co. (Pa.) V. M. A.....	Sept. 1, 1908....	York, Pa.....	E. S. Bausticker, York, Pa.
Philippine V. M. A.....	.....	.....	R. H. McMullen, Manila.
Montana State V. M. A.....	Oct., 1908	Helena.....	
Veterinary Ass'n of Alberta... ..	.....	.....	C. H. H. Sweetapple, For. Saskatchewan, Alta., Can.
Chicago Veterinary Society.....	2d Tues. ea. mo.	Chicago	J. M. Parks, Chicago.
Maryland State Vet. Society.....	.....	Baltimore.....	H. H. Counselman, Sec'y.
St. Louis Soc. of Vet. Inspectors.	1st Wed. fol. the 2d Sun. ea. mo.	St. Louis.....	Wm.T.Conway, St.Louis, Mo.

PUBLISHERS' DEPARTMENT.

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Rejected manuscripts will not be returned unless postage is forwarded.

Subscribers are earnestly requested to notify the Business Manager immediately upon changing their address. **Make all checks or P. O. orders payable to American Veterinary Review.**

PARKE, DAVIS & COMPANY have so many good things among their specialties that they could not carry them all on their ½-page space on the top of the outside back cover page, so have engaged a full page in addition, on page 4, in the front form of the adv. dept., where their patrons will find other things of interest.

SUMMER COUGHS are among the annoying list of conditions that veterinarians meet at this season of the year. GLYCO-HEROIN (SMITH) will dispel this particular annoyance sooner than anything else. We refer *new* readers to page 2 (adv. dept.) for full information; the *old* ones know all about it.

KEEP a good stock of ANTI-ITIS on hand this weather. This cool preparation works while you sleep on swollen tendons and bruised shins, common to hot weather, among hard-worked horses. See address, etc., on page 6 (adv. dept.).

GET your *"heat-prostration cases"* off the hot asphalt pavement if you want to save them. RECH-MARBAKER CO. suggest an easy method on page 7 (adv. dept.).

WHEN perusing the advertising pages of the REVIEW, as all its readers have the habit of doing, read carefully the list of C. BISCHOFF & CO. on page 9 (adv. dept.); it is especially interesting.

THIS is the season when disinfectants play an important rôle in the drama of life. Do not overlook CHLRO-NAPTHOLEUM when in search of a *true* one. Any information you do not find in regard to it on the lower half of the inside back cover page you can obtain by writing the manufacturers.

THERAPOGEN is an especially pleasant antiseptic for summer use, as in addition to its positive antiseptic powers, it has a refreshing effect upon the user. H. LIEBER & CO, No. 1 Platt Street, New York, are the importers.